



**Metropolitan Transportation Authority**

# Finance Committee Meeting December 2017

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## Committee Members

**L. Schwartz, Chair**

F. Ferrer, Vice Chair

N. Brown\*

I. Greenberg\*

D. Jones

C. Moerdler

J. Molloy

M. Pally

S. Rechler

P. Trottenberg

V. Vanterpool

J. Vitiello

P. Ward

C. Weisbrod

C. Wortendyke

N. Zuckerman

# **Finance Committee Meeting**

**2 Broadway, 20th Floor Board Room  
New York, NY 10004**

**Monday, 12/11/2017  
12:15 - 1:30 PM ET**

## **1. PUBLIC COMMENTS PERIOD**

## **2. APPROVAL OF MINUTES – NOVEMBER 13, 2017**

*Finance Committee Minutes - Page 4*

## **3. 2018 DRAFT COMMITTEE WORK PLAN**

*Draft 2018 Work Plan - Page 10*

## **4. BUDGETS/CAPITAL CYCLE**

*Finance Watch - Page 18*

## **5. MTA HEADQUARTERS & ALL-AGENCY ITEMS**

### **Action Items**

*Authorization to Issue New Money Transportation Revenue Bonds, Dedicated Tax Fund Bonds, TBTA General Revenue Bonds, and TBTA Subordinated Revenue Bonds - Page 30*  
*Approval of Supplemental Resolutions Authorizing Refunding Bonds - Page 88*  
*MTA and TBTA Reimbursement Resolutions for Federal Tax Purposes - Page 147*  
*Authorization to Extend NYPA Contracts - Page 151*  
*Executive Order 88 - Advanced Metering Infrastructure - Page 153*  
*Adoption of 2018 Budget and 2018-2021 Financial Plan (Available in the Exhibit Book and MTA.Info) - Page 155*  
*MTA 2015-2019 Capital Plan Program Amendment - Page 156*

### **Report and Information Items**

*Contract Change Order Report - Page 158*

### **Procurements**

*MTAHQ Procurement Report - Page 161*  
*MTAHQ Competitive Procurements - Page 163*  
*MTAHQ Ratification - Page 166*

## **6. METRO-NORTH RAILROAD & LONG ISLAND RAIL ROAD**

*MNR Procurements - Page 170*

*LIRR Procurements - Page 176*

## **7. NEW YORK CITY TRANSIT, and MTA BUS OPERATIONS**

*NYCT Procurements - Page 188*

## **8. BRIDGES AND TUNNELS**

*B & T Procurement - Page 194*

## **9. FIRST MUTUAL TRANSPORTATION ASSURANCE COMPANY (No Items)**

## **10. MTA CONSOLIDATED REPORTS**

*Mid-Year Forecast and November Forecast vs. Actual Results - Page 198*

*Statement of Operations - Page 201*

*Overtime - Page 208*

*Subsidy, Interagency Loans and Stabilization Fund Transactions - Page 213*

*Debt Service - Page 221*

*Positions - Page 223*

*Farebox Operating and Recovery Ratios - Page 226*

*MTA Ridership - Page 227*

*Fuel Hedge Program - Page 251*

## **11. REAL ESTATE AGENDA**

**Action Items (No Items)**

**Report and Information Items**

*Real Estate Info Items - Page 254*

Date of next meeting: January 22, 2018 @ 12:45pm

Minutes of the MTA Finance Committee Meeting  
November 13, 2017  
2 Broadway, 20th Floor Board Room  
New York, NY 10004  
Scheduled 12:30 PM

The following Finance Committee Members attended:

Hon. Fernando Ferrer, Vice Chair  
Hon. Norman E. Brown  
Hon. Ira Greenberg  
Hon. David R. Jones  
Hon. Charles G. Moerdler  
Hon. John J. Molloy  
Hon. Mitchell H. Pally  
Hon. Scott Rechler  
Hon. Veronica Vanterpool  
Hon. James E. Vitiello  
Hon. Carl Weisbrod  
Hon. Carl V. Wortendyke

The following Finance Committee Members did not attend:

Hon. Lawrence Schwartz, Chair  
Hon. Polly Trottenberg  
Hon. Peter Ward  
Hon. Neal Zuckerman

The following Board Members were also present:

Hon. Andrew Albert  
Hon. Susan G. Metzger

The following MTA staff attended:

Robert Foran  
Douglas Johnson  
Patrick McCoy  
David Ross  
Jeffrey Rosen  
David Florio

Vice Chair Ferrer called the November 13, 2017 meeting of the Finance Committee to order at 1:20 PM.

### **I. Public Comments**

There were two public speakers. Mr. Omar Vera discussed fees for purchasing new MetroCards, and his opinion that these fees should be eliminated. Mr. Murray Bodin discussed issues related to Metro-North, including his views regarding potential fiscal and legal impacts from decisions regarding railroad crossings and rail cars.

## **II. Approval of Minutes**

The Committee voted to approve the minutes to its prior meeting held on October 23, 2017 (see pages 4 through 12 of the Committee book).

## **III. Committee Work Plan**

There were no changes to the Work Plan (see pages 14 through 20 of the Committee book).

## **IV. Budgets/Capital Cycle**

### **A. BudgetWatch**

Mr. Douglas Johnson noted that there is no BudgetWatch for November because the November Financial Plan will be presented by Mr. Robert Foran in a joint meeting of the Board and Finance Committee on Wednesday, November 15, 2017.

### **B. FinanceWatch**

Mr. Patrick McCoy presented FinanceWatch (see pages 22 through 31 of the Committee book for the complete FinanceWatch report).

**Remarketing:** Mr. McCoy reported on two recent remarketings. First, he noted the Transportation Revenue Variable Rate Refunding Bonds, Series 2011B and Subseries 2012G-4 remarketing. The bonds were Floating Rate Tender Notes (FRNs) and were successfully remarketed as five year FRNs, priced at 67% of 1-month LIBOR plus a spread of 55 basis points. Next, he reported on the Transportation Revenue Variable Rate Refunding Bonds, Subseries 2014D-2, which were remarketed as FRNs, priced at SIFMA plus a spread of 45 basis points.

**Refundings:** Mr. McCoy discussed the TBTA General Revenue Refunding Bonds, Series 2017C that priced earlier in November. The transaction achieved an all-in True Interest Cost (TIC) of 2.81%. The proceeds are being used to refund certain outstanding TBTA bonds, as well as retire a portion of the TBTA BANs that mature on February 15, 2018. Mr. McCoy noted that with attractive market conditions, the order book was robust, including approximately \$975 million in retail orders and more than \$2.3 billion in priority orders, which allowed tighter pricing than had previously been achieved on the TBTA credit. Mr. McCoy further commented that the longest maturity bond, a 25 year bond, had spreads of 12 basis points, where previously it might have had spreads between 20 to 30 basis points. The refunding transaction achieved net present value savings of approximately \$55.6 million.

**Fuel Hedge:** Mr. McCoy reported that on October 26, 2017, MTA executed a 2.6 gallon ultra-low sulfur diesel fuel hedge with Goldman, Sachs & Co./J Aron at an all-in price of \$1.7635/gallon. MTA's existing approved commodity counterparties participated in bidding on the transaction: Cargill Incorporated; Goldman, Sachs & Co./ J Aron; J.P. Morgan Ventures Energy Corporation; and Macquarie Group. The hedge covers the period from October 2018 through September 2019.

**Congressional Legislation:** Mr. McCoy commented on proposed Congressional legislation regarding tax reform that would have an impact on municipal issuers. Both the House and Senate

proposals include the elimination of advance refundings effective January 1, 2018. Mr. McCoy noted that advance refunding is a tool commonly used to manage MTA's debt portfolio and reduce the costs of that portfolio. Mr. McCoy commented that MTA has been utilizing advance refundings especially in 2016 and 2017, and achieving savings from those transactions.

**Discussion:** Mr. Weisbrod inquired about the rationale for the elimination of advance refundings. Mr. Robert Foran responded that the primary issue is that with advance refundings there are two sets of tax-exempt bonds outstanding, the new refunding bonds that are issued, and refunded bonds that are escrowed and that do not have call dates for several years, which is considered to be a revenue drain. Mr. Foran further noted that the legislative proposals do not remove the ability to do current refundings (within 90 days of the call date).

## **V. MTA Headquarters and All-Agency Items**

### **A. Reports and Information Items**

Mr. Johnson reported that there were four Reports and Information items (see pages 41 through 55 in the Committee book and the MTA Board website <http://web.mta.info/mta/news/books/> for these information materials).

1. Station Maintenance Receivable Report Update
2. Review and Assessment of the Finance Committee Charter
3. Report on Executive Order 168
4. Draft Financial Statements Second Quarter 2017

#### **1. Station Maintenance Receivable Report Update**

Mr. Johnson reported that the total amount billed to the counties for the period from April 1, 2016 through March 31, 2017 was \$166,131,790. All of it has been received (see pages 32 through 34 of the Committee book).

#### **2. Review and Assessment of the Finance Committee Charter**

Mr. Johnson reported that the charter is included on the agenda annually so that members of the Committee may review and assess its adequacy (see pages 35 through 38 of the Committee book). Mr. Foran commented that there are non-substantive changes and a redline is incorporated in the Committee book. He further noted that the Corporate Governance Committee will review the changes at its next meeting and submit all the charters for approval to the full Board.

#### **3. Report on Executive Order 168**

Mr. Johnson noted that the third item is the monthly Report on Executive Order 168 (see page 39 of the Committee book).

#### **4. Draft Financial Statements Second Quarter**

Mr. Johnson reported that a draft is available of the Consolidated Interim Financial Statements as of and for the Six-Month Period Ended June 30, 2017. These financial statements will be presented to the Audit Committee and are posted to the MTA Board website.

## **B. Procurements**

Mr. David Ross reported that there were three competitive procurements for MTA Headquarters for a total of \$15,018,573.60 (see pages 40 through 44 of the Committee book for details on the five procurements).

Mr. Ross highlighted the procurements, including two for Arts for Transit enhanced station initiatives, and one with CorVel Healthcare Corporation to provide certain third party medical administration services. Regarding the CorVel Healthcare contract, Mr. Ross noted that utilization of a contractor providing these medical reviews has resulted in savings to the MTA. He noted that the contract amount was competitively negotiated and is considered fair and reasonable and includes the full eight years (five years, plus a three year extension). Lastly, Mr. Ross noted that there were three proposers for the medical services contract, but that CorVel, the incumbent, bid 13% lower than other proposers.

The Committee voted to recommend the procurement items before the Board for approval.

## **VI. Metro-North Railroad**

### **A. Procurement**

Mr. Ross reported that there was one non-competitive sole source procurement for Metro-North for a total of \$500,000 for engineering services related to Positive Train Control (see pages 46 and 47 of the Committee book).

The Committee voted to recommend the procurement item before the Board for approval.

## **VII. LIRR**

There were no items for LIRR.

## **VIII. NYCT/MTA Bus Operations**

### **A. Procurement**

Mr. Ross reported that there was one competitive procurement for NYCT/MTA Bus Operations for a total of \$100,000,000, for an RFP to award eight competitively solicited consultant contracts for federally funded construction and security projects. The cost of this contract will be funded with funds from the Federal Transit Administration, and a WAR certificate will be issued for each task order prior to award (see pages 48 through 50 of the Committee book).

The Committee voted to recommend the procurement item before the Board for approval.

## **IX. Bridges and Tunnels**

Mr. Ross reported that there was one non-competitive procurement for Bridges and Tunnels for a total of \$548,858 for installation and maintenance of a video-based audit system to monitor the performance of Open Road Tolling (see pages 52 and 53 of the Committee book).

The Committee voted to recommend the procurement item before the Board for approval.

## **X. FMTAC**

There were no items for FMTAC.

## **XI. MTA Consolidated Reports**

This month's consolidated reports include: September results versus Mid-Year Forecast, including statements of operations; overtime reports; subsidy, interagency loans and stabilization fund transactions; debt service; total positions by function and agency; farebox recovery and operating ratios; MTA ridership; and the fuel hedge program (see pages 54 through 106 of the Committee book).

## **XII. Real Estate Agenda**

### **A. Action Items**

Mr. Rosen reported that there were six action items (see pages 108 through 134 of the Committee book for real estate action and information items). Mr. Rosen introduced David Florio, Director, Leasing, Acquisition & Operations, who will be leading the Real Estate Department when Mr. Rosen retires after the December Board meetings.

**Discussion:** Mr. Weisbrod inquired regarding the item related to the exchange of property deed restrictions with the Village of Freeport and whether the project has any affordable housing planned for that site. He further inquired how MTA is able to influence affordable housing in transit-oriented development. Mr. Rosen clarified the restrictions related to the Freeport parcel. Mr. Rosen further noted that a few years ago, the Board had vigorous discussions related to affordable housing and the upshot is that MTA does encourage affordable housing in a way that is consistent with maximizing its assets. Mr. Pally said that the project does meet State law regarding affordable housing and any project on Long Island may go beyond State law in its percentages. Mr. Ferrer noted that while MTA may encourage affordable housing, an important part of the earlier discussion is that MTA should not be regulating affordable housing. Mr. Weisbrod commented that when MTA has an opportunity to use its leverage related to affordable housing, he hopes it will. Mr. Moerdler also commented on the previous discussion that the Board had related to affordable housing, noting projects in Westchester County (Village of Bronxville) and Harrison, NY that generated some of the issues raised by the Board. Mr. Rechler said that affordable housing makes sense in certain locations, but another consideration should be economic vitality of the region, such as in locations where there are not a lot of people, and enticing an economic generator with new residents driving growth of the local economy is critical.

The Committee voted to recommend the real estate action items before the Board for approval. Mr. Weisbrod abstained.



### **XIII. Adjournment**

Upon motion duly made and seconded, the November 13, 2017 meeting of the Finance Committee was adjourned at 1:46 PM.

Respectfully submitted,

Marcia Tannian  
Deputy Director, Finance

# DRAFT 2018 Finance Committee Work Plan

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## I. RECURRING AGENDA ITEMS

BudgetWatch  
FinanceWatch  
Approval of Minutes  
Procurements (if any)  
Action Items (if any)  
MTA Consolidated Reports

### Responsibility

MTA Div. Mgmt/Budget  
MTA Finance  
Board Secretary  
Procurement  
Agency  
MTA Budget

## II. SPECIFIC AGENDA ITEMS

### Responsibility

### **January 2018**

#### *Other:*

Special Report: Finance Department 2017 Year-End Review  
DRAFT MTA Financial Statements 3<sup>rd</sup> Quarter for the Nine-Months  
Ended September 2017

MTA Finance

MTA Comptroller

### **February 2018**

#### *Action Items:*

2017 TBTA Operating Surplus  
Mortgage Recording Tax – Escalation Payments to Dutchess,  
Orange and Rockland Counties

B&T/MTA

MTA Treasury, MTA  
Div. Mgmt/Budget

#### *Other:*

February Financial Plan 2018-2021

MTA Div. Mgmt/Budget

### **March 2018**

#### *Action Items:*

All-Agency Real Property Disposition Guidelines and All-Agency  
Personal Property Disposition Guidelines

MTA Real Estate/MTA  
Corporate Compliance  
MTA Proc., Agencies

All-Agency Annual Procurement Report

#### *Other:*

MTA Prompt Payment Annual Report 2017  
Contract Change Order Report

MTA BSC

MTA Proc., Agencies

### **April 2018**

#### *Action Item:*

MTA 2017 Annual Investment Report

MTA Treasury

#### *Other:*

Annual Report on Variable Rate Debt  
DRAFT MTA Financial Statements Fiscal Year-End Twelve-Months  
Ended December 2017

MTA Finance

MTA Comptroller

## **May 2018**

### *Other:*

Station Maintenance Billings Approval	MTA Comptroller
Annual Pension Fund Report (Audit Committee Members to be invited)	MTA Labor
Annual FMTAC Meeting	MTA RIM
Annual FMTAC Investment Performance Report	MTA RIM

## **June 2018**

### *Action Item:*

PWEF Assessment	MTA Capital Program Mgmt/ MTA Div. Mgmt/Budget
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### *Other:*

Update on IT Transformation	MTA Information Technology
Update on Procurement Consolidation	MTA Procurement
Contract Change Order Report	MTA Proc., Agencies
DRAFT MTA Financial Statements 1 <sup>st</sup> Quarter for the Three-Months Ended March 2018	MTA Comptroller

## **July 2018**

2019 Preliminary Budget/July Financial Plan 2019-2022  
(Joint Session with MTA Board)

MTA Div. Mgmt/Budget

## **September 2018**

2019 Preliminary Budget/July Financial Plan 2019-2022  
(materials previously distributed)

MTA Div. Mgmt/Budget

### *Action Item:*

Resolution to Authorize the Execution, Filing and Acceptance of Federal Funds	MTA Grant Mgmt.
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### *Other:*

Contract Change Order Report	MTA Proc., Agencies
DRAFT MTA Financial Statements 2 <sup>nd</sup> Quarter for the Six-Months Ended June 2018	MTA Comptroller

## **October 2018**

2019 Preliminary Budget/July Financial Plan 2019-2022  
(materials previously distributed)

MTA Div. Mgmt/Budget

### *Other:*

Update on the Business Service Center	MTA BSC
Annual Review of MTA's Derivative Portfolio - Including Fuel Hedge	MTA Finance
MTA 2018 Semi-Annual Investment Report	MTA Treasury

## **November 2018**

2019 Final Proposed Budget/November Financial Plan 2019-2022  
(Joint Session with MTA Board)

MTA Div. Mgmt/Budget

### *Other:*

Station Maintenance Billing Update	MTA Comptroller
Review and Assessment of the Finance Committee Charter	MTA CFO

## **December 2018**

Adoption of 2019 Budget and 2019-2022 Financial Plan

MTA Div. Mgmt/Budget

### *Action Items:*

Authorization to issue New Money Transportation Revenue Bonds,  
Dedicated Tax Fund Bonds, TBTA General Revenue Bonds, and  
TBTA Subordinated Revenue Bonds

MTA Finance

Approval of Supplemental Resolutions Authorizing Refunding Bonds  
MTA and TBTA Reimbursement Resolutions for Federal Tax Purposes

MTA Finance

MTA Treasury

### *Other:*

Draft 2019 Finance Committee Work Plan  
Contract Change Order Report

MTA Div. Mgmt/Budget

MTA Proc., Agencies

## **DETAILS**

### **JANUARY 2018**

#### *Other:*

#### Special Report: Finance Department 2017 Year-End Review

The MTA Finance Department will present a report that summarizes financing activities for 2017.

#### DRAFT MTA Financial Statements for the Nine-Months Ended, September 2017

Included for information is a copy of the Independent Accountant's Review Report of MTA Financial Statements for the Nine-Months ended, September 30, 2017.

### **FEBRUARY 2018**

#### *Action Items:*

#### 2017 TBTA Operating Surplus

MTA Bridges and Runnels should be prepared to answer questions on a staff summary requesting (1) transfer of TBTA 2017 Operating Surplus and Investment Income, (2) advances of TBTA 2017 Operating Surplus, and (3) the deduction from 2017 TBTA Operating Revenue, funds which shall be paid into the Necessary Reconstruction Reserve.

#### Mortgage Recording Tax – Escalation Payments to Dutchess, Orange and Rockland Counties

By State statute, each of these counties is entitled to a share of MTA's MRT-2 tax receipts. The amount may be no less than they received in 1987 (even if the taxes collected fall below the 1987 levels), but there are proportional upward adjustments if taxes collected in the particular county exceed the 1987 totals. Such upward adjustments are expected to be required this year, based on the 2009 experience thus far. The MTA Budget and Treasury Division will be prepared to answer questions on the related Staff Summary authorizing the payments.

#### *Other:*

#### February Financial Plan 2018-2021

The MTA Division of Management and Budget will present for information purposes a revised 2018-2021 Financial Plan reflecting any technical adjustments from the Adopted Budget and the incorporation of certain "below-the-line" policy actions into the baseline.

## **MARCH 2018**

### *Action Items:*

#### All-Agency Real Property Disposition Guidelines and All-Agency Personal Property Disposition Guidelines

Board approval of above guidelines as required annually by Public Authorities Law Sections 2895-2897. MTA Real Estate and MTA Corporate Compliance should be prepared to answer questions regarding these guidelines.

#### All-Agency Annual Procurement Report

The Agencies and the MTA Procurement Division should be prepared to answer questions on this voluminous State-required report.

### *Other:*

#### MTA Annual Prompt Payment Status Report

The Senior Director of the MTA Business Service Center should be prepared to discuss a report, to be included in the Agenda materials, that reviews MTA-wide success in meeting mandated prompt-payment deadlines (including the interest penalties incurred as a result of late payment).

#### Contract Change Order Report

Change orders that would have required Board approval prior to the July 2013 Governance Committee measure increasing the approval threshold to \$750,000 are included in this quarterly report, for information only. All such contract change orders are reported to the Finance Committee; in addition, such capital contract change orders are reported to the CPOC Committee.

## **APRIL 2018**

### *Action Item:*

#### MTA Annual Investment Report

The MTA Treasury Division should be prepared to answer questions on this State-required report.

### *Other:*

#### Annual Report on Variable Rate Debt

The MTA Finance Department will present a report that summarizes the performance of the MTA's various variable-rate debt programs, including a discussion of the savings (compared to long-term rates) achieved through variable rate debt and a discussion on the current policy and limits on the use of variable rate debt.

#### DRAFT MTA Financial Statements for the Twelve-Months Ended, December 2017

Included for information is a copy of the Independent Accountant's Audit Report of MTA Financial Statements for the Twelve-Months ended, December 31, 2017.

## **MAY 2018**

*Other:*

### **Station Maintenance Billings Approval**

Under the Public Authorities Law, the Board is required to certify to the City and the counties in the Metropolitan Transportation District the total costs to MTA for operating and maintaining Commuter Railroad passenger stations. The City and county assessments are both now determined through a formula.

### **Annual Pension Fund Report**

The MTA Labor Division, representatives of the various pension fund boards, and their pension consultants should be prepared to answer questions on a report, to be included in the Agenda materials, that reviews the 2017 investment performance and other experience of the various MTA pension funds. Among other matters, this report should (i) make recommendations on appropriate investment-earnings assumptions in light of the experience of the past three years; (ii) discuss the implications for asset allocations in light of such recommendations; (iii) discuss the effect on (under) funding of the systems in light of such performance and recommendation; (iv) provide appropriate comparisons with other public pension systems; and (v) solicit the opinions of the Board Operating Committees on these recommendations in light of their effects on Agency budgets.

### **Annual Meeting of the First Mutual Transportation Assurance Company**

The MTA's Captive Insurance Company will hold its statutorily required annual meeting in which it will review the prior year's operations as well as submit its financial statements and actuarial report for final approval. The MTA Risk and Insurance Management Divisions, along with the FMTAC's outside investment managers, should be prepared to answer questions on reports.

## **JUNE 2018**

*Action Item:*

### **PWEF Assessment**

The MTA Division of Management and Budget, assisted by MTA Capital Program Management, should prepare the usual annual staff summary authorizing the payment of this assessment to the State. The State levies an assessment of the value of construction-contract awards to cover its cost of enforcing prevailing-wage legislation.

*Other:*

### **IT Transformation**

IT Management will present progress made to date to promote IT Transformation. A general organizational overview will be provided and an outline of key milestones and project deliverables will be shared. Initiatives that have made IT more resilient will also be discussed.

### **Update on Procurement Consolidation**

Procurement Management will present progress made to date to promote Non-Core Procurement Consolidation. A general organizational overview will be provided and an outline of key milestones and project deliverables will be shared.

### Contract Change Order Report

Change orders that would have required Board approval prior to the July 2013 Governance Committee measure increasing the approval threshold to \$750,000 are included in this quarterly report, for information only. All such contract change orders are reported to the Finance Committee; in addition, such capital contract change orders are reported to the CPOC Committee.

### DRAFT MTA Financial Statements for the Three-Months Ended, March 2018

Included for information is a copy of the Independent Accountant's Review Report of MTA Financial Statements for the Three-Months ended, March 31, 2018.

## **JULY 2018**

### 2019 Preliminary Budget/July Financial Plan 2019-2022 (JOINT Session with MTA Board)

The Chief Financial Officer and MTA Budget Division will present an updated forecast for 2018, a Preliminary Budget for 2019, and a Financial Plan for 2019-2022.

## **SEPTEMBER 2018**

### 2018 Preliminary Budget/July Financial Plan 2019-2022

Public comment will be accepted on the 2018 Preliminary Budget.

#### *Action Item:*

### Resolution to Authorize the Execution, Filing and Acceptance of Federal Funds

The MTA Office of Grant Management will hold a public hearing in accordance with Federal law and then request the Board's approval of a resolution that would authorize the Chairman or a designated officer to execute the applications and accept grants of financial assistance from the Federal government.

#### *Other:*

### Contract Change Order Report

Change orders that would have required Board approval prior to the July 2013 Governance Committee measure increasing the approval threshold to \$750,000 are included in this quarterly report, for information only. All such contract change orders are reported to the Finance Committee; in addition, such capital contract change orders are reported to the CPOC Committee.

### DRAFT MTA Financial Statements for the Six-Months Ended, June 2018

Included for information is a copy of the Independent Accountant's Review Report of MTA Financial Statements for the Six-Months ended, June 30, 2018.

## **OCTOBER 2018**

### 2019 Preliminary Budget/July Financial Plan 2019-2022

Public comment will be accepted on the 2019 Preliminary Budget.

*Other:*

Update on Business Service Center

The Business Service Center will provide an update on its initiatives and upcoming project milestones. Operational performance metrics will also be shared.

Annual Review of MTA's Derivative Portfolio – Including Fuel Hedge

The Finance Department will provide an update on MTA's portfolio of derivative contracts.

MTA 2018 Semi-Annual Investment Report

The MTA Treasury Division should be prepared to answer questions on this report.

**NOVEMBER 2018**

2019 Final Proposed Budget/November Financial Plan 2019-2022 (Joint Session with MTA Board)

The Chief Financial Officer and MTA Budget Division will present an updated forecast for 20189, a Final Proposed Budget for 20197, and an updated Financial Plan for 2019-2022.

*Other:*

Station Maintenance Billing Update

The MTA Comptroller Division will provide a report on the collection and audit status of station maintenance billings issued as of June 1, 2018.

Review and Assessment of the Finance Committee Charter

MTA Chief Financial Officer will present the most updated Finance Committee Charter to the Finance Committee members for them to review and assess its adequacy. The annual assessment is required under the current Committee Charter.

**DECEMBER 2018**

Adoption of 2019 Budget and 2019-2022 Financial Plan

The Committee will recommend action to the Board on the Final Proposed Budget for 2019 and 2019-2022 Financial Plan.

*Action Items:*

Approval of Supplemental Resolutions Authorizing New Money Bonds.

Board approval to allow for the issuance of new money bonds to fund existing approved bond financed capital projects under the Transportation Revenue Bond Obligation Resolution, the Dedicated Tax Fund Obligation Resolution, and in the case of Bridge & Tunnel Capital Projects, the Triborough Bridge and Tunnel Authority Senior and Subordinate Obligation Resolutions.

Approval of Supplemental Resolutions Authorizing Refunding Bonds

Board action required to allow for the refunding to fixed-rate bonds from time to time provided that such refundings comply with the Board approved refunding policy.

Approval of MTA and TBTA Reimbursement Resolutions for Federal Tax Purposes.

Board approval required to allow for the reimbursement of capital expenditures at a later date from the proceeds of tax-exempt bond sales.



*Other:*

Draft 2019 Finance Committee Work Plan

The MTA Chief Financial Officer will present a proposed 2019 Finance Committee Work Plan that will address major issues, SBP and budget process issues, and reports required by statute.

Contract Change Order Report

Change orders that would have required Board approval prior to the July 2013 Governance Committee measure increasing the approval threshold to \$750,000 are included in this quarterly report, for information only. All such contract change orders are reported to the Finance Committee; in addition, such capital contract change orders are reported to the CPOC Committee.

# FinanceWatch

December 11, 2017

## Financing Activity

### \$720,990,000 Triborough Bridge and Tunnel Authority General Revenue Bonds, Series 2017C

On November 17, 2017, MTA issued \$720.990 million of Triborough Bridge and Tunnel Authority General Revenue Bonds, Series 2017C. The Series 2017C bonds were issued as \$520.990 million Triborough Bridge and Tunnel Authority General Revenue Refunding Bonds, Subseries 2017C-1 and \$200.000 million Triborough Bridge and Tunnel Authority General Revenue Bonds, Subseries 2017C-2. Proceeds from the transaction were used to retire the existing outstanding 2017A Bond Anticipation Notes in the amount of \$235.310 and to refund the following outstanding series of Triborough Bridge and Tunnel Authority bonds: \$48.245 million of Subordinate Series 2008D; \$22.200 million of Series 2008B-1; \$17.395 million of 2008B-3; \$13.820 million of Series 2009A-1; \$383.230 million of Series 2011A; \$19.780 million of Series 2012A; \$27.210 million of Series 2013C; \$30.505 million of Series 2014A; and \$17.555 million of Series 2015A. The Series 2017C-1 bonds were issued as tax-exempt fixed rate bonds with a final maturity of November 15, 2028. The Series 2017C-2 bonds were issued as tax-exempt fixed rate bonds with a final maturity of November 15, 2042.

The refunding resulted in a net present value savings of \$55.588 million or 9.59% of the par amount of the refunded bonds. This transaction was led by book-running senior manager Siebert Cisneros Shank & Co., L.L.C. together with special co-senior managers: Academy Securities, a Service Disabled Veteran-Owned firm; Alamo Capital, a WBE firm; and Rice Financial Products Company, a MBE firm. Nixon Peabody LLP and D. Seaton and Associates served as co-bond counsel and Public Resources Advisory Group and Rockfleet Financial Services served as co-financial advisors.

#### Transactions Summary Statistics

	<u>Series 2017C-1</u>	<u>Series 2017C-2</u>	<u>Combined</u>
<i>Par Amount:</i>	\$520.990 million	\$200.000 million	\$720.990 million
<i>Premium:</i>	\$132.076 million	\$40.640 million	\$172.716 million
<i>All-in TIC:</i>	2.01%	3.82%	2.81%
<i>Average Coupon:</i>	4.96%	5.00%	4.98%
<i>Average Life:</i>	9.27 years	23.56 years	13.23 years
<i>PV Savings (\$):</i>	\$55.588 million	N/A	\$55.588 million
<i>PV Savings (%):</i>	9.59% <sup>(1)</sup>	N/A	9.59% <sup>(1)</sup>
<i>Final Maturity:</i>	11/15/2028	11/15/2042	11/15/2042
<i>Underwriter's Discount:</i>	\$4.30 (\$2,241,053)	\$4.69 (\$938,665)	\$4.41 (\$3,179,718)
<i>State Bond Issuance Fee:</i>	\$0 <sup>(2)</sup>	\$8.33 (\$1,666,006)	\$8.33 (\$1,666,006)
<i>Cost of Issuance:</i>	\$1.20 (\$626,851)	\$8.54 (\$1,707,748)	\$3.24 (\$2,334,599)

- (1) MTA's Bond and Other Debt Obligations Refunding Policy states that a refunding must achieve an aggregate NPV savings of 3.0% of the par amount of the refunded bonds.
- (2) MTA received a waiver from making this payment from the State Division of the Budget.

### **\$2,021,461,604.50 MTA Transportation Revenue Refunding Green Bonds, Series 2017C**

On November 21, 2017, MTA priced approximately \$2,021.462 million of MTA Transportation Revenue Refunding Green Bonds, Series 2017C. The Series 2017C bonds were issued as \$1,821.460 million Transportation Revenue Refunding Green Bonds, Subseries 2017C-1 and \$200.002 million Transportation Revenue Refunding Green Bonds, Subseries 2017C-2. Proceeds from the transaction will be used to refund the following outstanding series of Transportation Revenue bonds: \$5.245 million of Series 2008B-2; \$99.380 million of Series 2008B-3; \$434.920 million of 2010D; \$165.000 million of Series 2011A; \$230.265 million of Series 2011D; \$16.550 million of Series 2012B; \$136.185 million of Series 2012C; \$131.920 million of Series 2012E; \$54.380 million of Series 2012H; \$122.030 million of Series 2013A; \$67.845 million of Series 2013B; \$41.605 million of Series 2013C; \$91.030 million of Series 2013D; \$107.490 million of Series 2013E; \$45.250 million of Series 2014A-1; \$82.840 million of Series 2014A-2; \$62.220 million of Series 2014B; \$97.990 million of Series 2014C; \$39.545 million of Series 2014D-1; and \$8.150 million of Series 2015B. The Series 2017C-1 bonds will be issued as tax-exempt fixed rate Current Interest Bonds with a final maturity of November 15, 2038. The Series 2017C-2 bonds will be issued as tax-exempt Capital Appreciation Bonds with a final maturity of November 15, 2040.

The refunding resulted in a net present value savings of \$156.565 million or 7.68% of the par amount of the refunded bonds. This transaction was led by book-running senior manager BofA Merrill Lynch together with special co-senior managers: Citigroup; Goldman Sachs & Co. LLC; J.P. Morgan; and the MBE joint venture team of PNC Capital Markets LLC and The Williams Capital Group, L.P. Nixon Peabody LLP and D. Seaton and Associates served as co-bond counsel and Public Resources Advisory Group and Backstrom McCarley Berry & Co., LLC served as co-financial advisors.

#### Transactions Summary Statistics

	<u>Series 2017C</u>
<i>Par Amount:</i>	<i>\$2,021.462 million</i>
<i>Premium:</i>	<i>\$294.032 million</i>
<i>All-in TIC:</i>	<i>3.12%</i>
<i>Average Life:</i>	<i>13.32 years</i>
<i>PV Savings (\$):</i>	<i>\$156.565 million</i>
<i>PV Savings (%):</i>	<i>7.68%<sup>(1)</sup></i>
<i>Final Maturity:</i>	<i>11/15/2040</i>
<i>Underwriter's Discount:</i>	<i>\$4.45 (\$8,997,348)</i>
<i>State Bond Issuance Fee:</i>	<i>\$0<sup>(2)</sup></i>

<i>Cost of Issuance:</i>	<i>\$0.58 (\$1,179,646)</i>
<i>Ratings</i>	<i>A1/AA-/AA-/AA+</i>
<i>Senior Manager:</i>	<i>BofA Merrill Lynch</i>
<i>Special Co-Senior Managers:</i>	<i>Citigroup      Goldman Sachs   J.P. Morgan</i>
	<i>PNC Capital Markets LLC      The Williams Capital Group, L.P.</i>

- (1) MTA's Bond and Other Debt Obligations Refunding Policy states that a refunding must achieve an aggregate NPV savings of 3.0% of the par amount of the refunded bonds.
- (2) MTA received a waiver from making this payment from the State Division of the Budget.

### **Fuel Hedging Program**

#### **\$5,316,279 Diesel Fuel Hedge**

On November 29, 2017, MTA executed a 2,870,561 gallon ultra-low sulfur diesel fuel hedge with Goldman Sachs & Co./J Aron at an all-in price of \$1.852/gallon. MTA's existing approved commodity counterparties participated in bidding on the transaction: Cargill Incorporated; Goldman, Sachs & Co./ J Aron; J.P. Morgan Ventures Energy Corporation; and Macquarie Group. The hedge covers the period from November 2018 through October 2019.

# METROPOLITAN TRANSPORTATION AUTHORITY

## JULY FINANCIAL PLAN - Mid-Year Forecast

### Debt Service

November 2017

(\$ in millions)

	Mid-Year Forecast	Actual	Variance	% Var	Explanation
Dedicated Tax Fund:					
NYC Transit	\$9.9	\$0.0	\$9.9		
Commuter Railroads	1.0	0.0	1.0		
<b>Dedicated Tax Fund Subtotal</b>	<b>\$10.9</b>	<b>\$0.0</b>	<b>\$10.9</b>	<b>99.6%</b>	Reversal of prior period timing difference.
MTA Transportation Revenue:					
NYC Transit	\$60.0	\$27.8	\$32.3		
Commuter Railroads	46.2	17.4	28.8		
MTA Bus	1.7	0.0	1.7		
SIRTOA	0.2	0.0	0.2		
<b>MTA Transportation Revenue Subtotal</b>	<b>\$108.1</b>	<b>\$45.2</b>	<b>\$63.0</b>	<b>58.2%</b>	Timing of debt service as November 2017 debt service was partially prefunded in prior month.
2 Broadway COPs:					
NYC Transit	\$0.0	\$0.4	(\$0.4)		
Bridges & Tunnels	0.0	0.1	(0.1)		
MTA HQ	0.0	0.0	0.0		
Commuter Railroads	0.0	0.1	(0.1)		
<b>2 Broadway COPs Subtotal</b>	<b>\$0.0</b>	<b>\$0.6</b>	<b>(\$0.6)</b>	<b>0.0%</b>	
TBTA General Resolution (2):					
NYC Transit	\$14.9	\$18.4	(\$3.6)		
Commuter Railroads	7.0	8.4	(1.4)		
Bridges & Tunnels	19.2	24.0	(4.7)		
<b>TBTA General Resolution Subtotal</b>	<b>\$41.1</b>	<b>\$50.8</b>	<b>(\$9.7)</b>	<b>-23.6%</b>	Timing of debt service deposits.
TBTA Subordinate (2):					
NYC Transit	\$6.1	\$5.5	\$0.7		
Commuter Railroads	2.7	2.5	0.2		
Bridges & Tunnels	2.4	2.1	0.4		
<b>TBTA Subordinate Subtotal</b>	<b>\$11.2</b>	<b>\$10.0</b>	<b>\$1.3</b>	<b>11.2%</b>	Lower than budgeted variable rates.
<b>Total Debt Service</b>	<b>\$171.4</b>	<b>\$106.6</b>	<b>\$64.8</b>	<b>37.8%</b>	
Debt Service by Agency:					
NYC Transit	\$91.0	\$52.1	\$38.8		
Commuter Railroads	56.8	28.3	28.5		
MTA Bus	1.7	0.0	1.7		
SIRTOA	0.2	0.0	0.2		
Bridges & Tunnels	21.6	26.1	(4.4)		
MTAHQ	0.0	0.0	0.0		
<b>Total Debt Service</b>	<b>\$171.4</b>	<b>\$106.6</b>	<b>\$64.8</b>	<b>37.8%</b>	

#### Notes:

(1) Forecasted debt service is calculated based upon projected monthly deposits from available pledged revenues into debt service accounts. Actual payments to bondholders are made from the debt service accounts when due as required for each series of bonds and do not conform to this schedule.

(2) Generally, the calendarization of monthly debt service deposits is calculated by dividing projected annual debt service by 12. Month to month variations ("timing differences") on the existing debt portfolio can occur based upon, among other things, (a) for all bonds, the date when income from the securities in which the debt service accounts are invested becomes available varies, (b) for variable rate financings, differences between (i) the budgeted interest rate and the actual interest rate, (ii) projected interest payment dates to bondholders and actual interest payment dates to bondholders, and (iii) projected monthly funding dates for accrued debt service and actual funding dates, (c) for transactions with swaps, the difference between when MTA/TBTA funds debt service and the receipt of the corresponding swap payment by the counterparty, and difference between rates received and rates paid and (d) for commercial paper, the interest payment date is the date of the maturity of the commercial paper and the dealers set the term of the commercial paper from 1 to 270 days, which is not foreseeable at the time the annual debt service budgets are prepared.

(3) Debt service is allocated among Transit, Commuter, MTA Bus, and TBTA categories based on actual spending of bond proceeds for approved capital projects. Allocation of 2 Broadway COPs is based on occupancy.

Totals may not add due to rounding.

# METROPOLITAN TRANSPORTATION AUTHORITY

## JULY FINANCIAL PLAN - Mid-Year Forecast

### Debt Service

November 2017 Year-to-Date

(\$ in millions)

	Mid-Year Forecast	Actual	Variance	% Var	Explanation
Dedicated Tax Fund:					
NYC Transit	\$290.1	\$287.0	\$3.1		
Commuter Railroads	56.9	58.2	(1.4)		
<b>Dedicated Tax Fund Subtotal</b>	<b>\$347.0</b>	<b>\$345.2</b>	<b>\$1.7</b>	<b>0.5%</b>	
MTA Transportation Revenue:					
NYC Transit	\$815.8	\$807.5	\$8.3		
Commuter Railroads	541.0	517.2	23.8		
MTA Bus	10.6	0.0	10.6		
SIRTOA	1.0	0.0	1.0		
<b>MTA Transportation Revenue Subtotal</b>	<b>\$1,368.5</b>	<b>\$1,324.7</b>	<b>\$43.8</b>	<b>3.2%</b>	
2 Broadway COPs:					
NYC Transit	\$1.9	\$4.5	(\$2.6)		
Bridges & Tunnels	0.3	0.7	(0.4)		
MTA HQ	0.0	0.0	0.0		
Commuter Railroads	0.6	1.4	(0.8)		
<b>2 Broadway COPs Subtotal</b>	<b>\$2.8</b>	<b>\$6.6</b>	<b>(\$3.8)</b>	<b>-137.4%</b>	Timing of debt service deposits.
TBTA General Resolution (2):					
NYC Transit	\$163.6	\$167.8	(\$4.3)		
Commuter Railroads	76.9	78.1	(1.2)		
Bridges & Tunnels	250.1	245.6	4.5		
<b>TBTA General Resolution Subtotal</b>	<b>\$490.5</b>	<b>\$491.5</b>	<b>(\$1.0)</b>	<b>-0.2%</b>	
TBTA Subordinate (2):					
NYC Transit	\$61.4	\$61.6	(\$0.2)		
Commuter Railroads	27.0	27.2	(0.3)		
Bridges & Tunnels	24.3	24.0	0.2		
<b>TBTA Subordinate Subtotal</b>	<b>\$112.7</b>	<b>\$112.9</b>	<b>(\$0.2)</b>	<b>-0.2%</b>	
<b>Total Debt Service</b>	<b>\$2,321.4</b>	<b>\$2,280.9</b>	<b>\$40.5</b>	<b>1.7%</b>	
Debt Service by Agency:					
NYC Transit	\$1,332.8	\$1,328.5	\$4.4		
Commuter Railroads	702.3	682.1	20.2		
MTA Bus	10.6	0.0	10.6		
SIRTOA	1.0	0.0	1.0		
Bridges & Tunnels	274.6	270.3	4.3		
MTAHQ	0.0	0.0	0.0		
<b>Total Debt Service</b>	<b>\$2,321.4</b>	<b>\$2,280.9</b>	<b>\$40.5</b>	<b>1.7%</b>	

#### Notes:

(1) Forecasted debt service is calculated based upon projected monthly deposits from available pledged revenues into debt service accounts. Actual payments to bondholders are made from the debt service accounts when due as required for each series of bonds and do not conform to this schedule.

(2) Generally, the calendarization of monthly debt service deposits is calculated by dividing projected annual debt service by 12. Month to month variations ("timing differences") on the existing debt portfolio can occur based upon, among other things, (a) for all bonds, the date when income from the securities in which the debt service accounts are invested becomes available varies, (b) for variable rate financings, differences between (i) the budgeted interest rate and the actual interest rate, (ii) projected interest payment dates to bondholders and actual interest payment dates to bondholders, and (iii) projected monthly funding dates for accrued debt service and actual funding dates, (c) for transactions with swaps, the difference between when MTA/TBTA funds debt service and the receipt of the corresponding swap payment by the counterparty, and difference between rates received and rates paid and (d) for commercial paper, the interest payment date is the date of the maturity of the commercial paper and the dealers set the term of the commercial paper from 1 to 270 days, which is not foreseeable at the time the annual debt service budgets are prepared.

(3) Debt service is allocated among Transit, Commuter, MTA Bus, and TBTA categories based on actual spending of bond proceeds for approved capital projects. Allocation of 2 Broadway COPs is based on occupancy.

Totals may not add due to rounding.

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**VARIABLE RATE: WEEKLY MODE**  
**RATE RESETS REPORT (Trailing 6-Weeks)**

Issue		TRB 2005E-2		TRB 2005E-3		TRB 2005D-1		TRB 2002G-1g		TRB 2012G-2	
Remarketing Agent		RBC		Loop Capital		Merrill Lynch		Goldman		TD Securities	
Liquidity Provider		RBC		Bank of Montreal		Helaba		TD Bank		TD Bank	
Liquidity/Insurer		LoC		LoC		LoC		LoC		LoC	
Par Outstanding (\$m)		74.06		74.06		148.13		42.55		125.00	
Swap Notional (\$m)		44.43		44.43		148.13		38.78		125.00	
Date	SIFMA	Spread to		Spread to		Spread to		Spread to		Spread to	
		Rate	SIFMA	Rate	SIFMA	Rate	SIFMA	Rate	SIFMA	Rate	SIFMA
10/18/2017	0.91%	0.91%	0.00%	0.91%	0.00%	0.92%	0.01%	0.89%	-0.02%	0.89%	-0.02%
10/25/2017	0.92%	0.92%	0.00%	0.92%	0.00%	0.92%	0.00%	0.90%	-0.02%	0.90%	-0.02%
11/1/2017	0.92%	0.92%	0.00%	0.92%	0.00%	0.90%	-0.02%	0.90%	-0.02%	0.90%	-0.02%
11/8/2017	0.92%	0.92%	0.00%	0.92%	0.00%	0.92%	0.00%	0.90%	-0.02%	0.90%	-0.02%
11/15/2017	0.94%	0.94%	0.00%	0.95%	0.01%	0.94%	0.00%	0.93%	-0.01%	0.92%	-0.02%
11/22/2017	0.96%	0.96%	0.00%	0.99%	0.03%	0.96%	0.00%	0.95%	-0.01%	0.94%	-0.02%

**Transportation Revenue Bonds**

**Dedicated Tax Fund Bonds**

Issue		TRB 2015E-2		TRB 2015E-3		TRB 2015E-4		DTF 2002B-1	
Remarketing Agent		Citigroup		Citigroup		Loop Capital		Mitsubishi	
Liquidity Provider		Tokyo Mitsubishi		Citibank		Bank of the West		Tokyo Mitsubishi	
Liquidity/Insurer		LoC		LoC		LoC		LoC	
Par Outstanding (\$m)		246.61		197.29		49.11		150.00	
Swap Notional (\$m)		None		None		None		None	
Date	SIFMA	Spread to		Spread to		Spread to		Spread to	
		Rate	SIFMA	Rate	SIFMA	Rate	SIFMA	Rate	SIFMA
10/18/2017	0.91%	0.90%	-0.01%	0.90%	-0.01%	0.95%	0.04%	0.91%	0.00%
10/25/2017	0.92%	0.92%	0.00%	0.92%	0.00%	0.96%	0.04%	0.92%	0.00%
11/1/2017	0.92%	0.93%	0.01%	0.93%	0.01%	0.96%	0.04%	0.91%	-0.01%
11/8/2017	0.92%	0.93%	0.01%	0.93%	0.01%	0.96%	0.04%	0.92%	0.00%
11/15/2017	0.94%	0.94%	0.00%	0.94%	0.00%	0.98%	0.04%	0.93%	-0.01%
11/22/2017	0.96%	0.96%	0.00%	0.96%	0.00%	1.00%	0.04%	0.96%	0.00%

**TBTA General Revenue Bonds**

Issue		TBTA 2005B-3	
Remarketing Agent		Morgan Stanley	
Liquidity Provider		Tokyo Mitsubishi	
Liquidity/Insurer		LoC	
Par Outstanding (\$m)		191.30	
Swap Notional (\$m)		191.30	
Date	SIFMA	Spread to	
		Rate	SIFMA
10/18/2017	0.91%	0.90%	-0.01%
10/25/2017	0.92%	0.90%	-0.02%
11/1/2017	0.92%	0.93%	0.01%
11/8/2017	0.92%	0.93%	0.01%
11/15/2017	0.94%	0.95%	0.01%
11/22/2017	0.96%	0.95%	-0.01%

Issue		TBTA 2001B		TBTA 2001C		TBTA 2003B-1	
Remarketing Agent		Citigroup		Morgan Stanley		PNC Capital	
Liquidity Provider		State Street		Tokyo Mitsubishi		PNC Bank	
Liquidity/Insurer		LoC		LoC		LoC	
Par Outstanding (\$m)		117.81		117.80		78.42	
Swap Notional (\$m)		None		None		2.05	
Date	SIFMA	Spread to		Spread to		Spread to	
		Rate	SIFMA	Rate	SIFMA	Rate	SIFMA
10/17/2017	0.91%	0.88%	-0.03%	0.90%	-0.01%	0.92%	0.01%
10/24/2017	0.92%	0.91%	-0.01%	0.90%	-0.02%	0.92%	0.00%
10/31/2017	0.92%	0.92%	0.00%	0.93%	0.01%	0.92%	0.00%
11/7/2017	0.92%	0.92%	0.00%	0.93%	0.01%	0.92%	0.00%
11/14/2017	0.94%	0.92%	-0.02%	0.95%	0.01%	0.95%	0.01%
11/21/2017	0.96%	0.93%	-0.03%	0.95%	-0.01%	0.95%	-0.01%

Issue		TBTA 2005A		TBTA SUB 2013D-2a		TBTA SUB 2013D-2b	
Remarketing Agent		TD Securities		BofA Merrill		BofA Merrill	
Liquidity Provider		TD Bank		BofA Merrill		BofA Merrill	
Liquidity/Insurer		LoC		LoC (Taxable)		LoC (Taxable)	
Par Outstanding (\$m)		118.68		58.02		90.45	
Swap Notional (\$m)		23.23		None		None	
Outstanding (\$m)	SIFMA	Spread to		Spread to		Spread to	
		Rate	SIFMA	Rate	SIFMA	Rate	SIFMA
10/17/2017	0.91%	0.88%	-0.03%	1.16%	0.25%	1.16%	0.25%
10/24/2017	0.92%	0.90%	-0.02%	1.20%	0.28%	1.20%	0.28%
10/31/2017	0.92%	0.90%	-0.02%	1.20%	0.28%	1.20%	0.28%
11/7/2017	0.92%	0.90%	-0.02%	1.20%	0.28%	1.20%	0.28%
11/14/2017	0.94%	0.92%	-0.02%	1.20%	0.26%	1.20%	0.26%
11/21/2017	0.96%	0.93%	-0.03%	1.23%	0.27%	1.23%	0.27%

Report Date 11/21/2017

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**VARIABLE RATE: FLOATING RATE NOTES (LIBOR)**  
**RATE RESETS REPORT (Trailing 6-Weeks)**

**Transportation Revenue Bonds**

Issue		TRB 2002D-2a-1		TRB 2002D-2a-2		TRB 2002D-2b	
Remarketing Agent		N/A		N/A		N/A	
Initial Purchase Date		4/6/2020		4/6/2021		5/15/2018	
Liquidity/Insurer		None		None		None	
Par Outstanding (\$m)		50.00		50.00		100.00	
Swap Notional (\$m)		50.00		50.00		100.00	
Date	67% of 1M LIBOR	Rate	Spread to 1M LIBOR	Rate	Spread to 1M LIBOR	Rate	Spread to 1M LIBOR
10/18/2017	0.83%	1.42%	0.59%	1.53%	0.94%	1.45%	0.62%
10/25/2017	0.83%	1.42%	0.59%	1.53%	0.94%	1.45%	0.62%
11/1/2017	0.83%	1.43%	0.59%	1.54%	0.94%	1.48%	0.64%
11/8/2017	0.83%	1.43%	0.59%	1.54%	0.94%	1.48%	0.64%
11/15/2017	0.85%	1.43%	0.58%	1.54%	0.96%	1.48%	0.63%
11/22/2017	0.88%	1.43%	0.55%	1.54%	0.99%	1.48%	0.60%

Issue		TRB 2002G-1d		TRB 2002G-1f		TRB 2002G-1h		TRB 2011B	
Remarketing Agent		N/A		N/A		N/A		N/A	
Initial Purchase Date		11/1/2017		11/1/2018		2/1/2022		11/1/2022	
Liquidity/Insurer		None		None		None		None	
Par Outstanding (\$m)		13.80		42.58		56.89		99.56	
Swap Notional (\$m)		12.58		38.80		51.85		56.22	
Date	67% of 1M LIBOR	Rate	Spread to 1M LIBOR	Rate	Spread to 1M LIBOR	Rate	Spread to 1M LIBOR	Rate	Spread to 1M LIBOR
10/18/2017	0.83%	1.66%	0.83%	1.31%	0.48%	1.65%	0.82%	1.18%	0.35%
10/25/2017	0.83%	1.66%	0.83%	1.31%	0.48%	1.65%	0.82%	1.18%	0.35%
11/1/2017	0.83%	No longer outstanding.		1.31%	0.48%	1.65%	0.82%	1.38%	0.55%
11/8/2017	0.83%			1.31%	0.48%	1.65%	0.82%	1.38%	0.55%
11/15/2017	0.85%			1.31%	0.47%	1.65%	0.81%	1.40%	0.55%
11/22/2017	0.88%			1.31%	0.43%	1.65%	0.77%	1.43%	0.55%

Issue		TRB 2012G-1		TRB 2012G-3		TRB 2012G-4	
Remarketing Agent		N/A		N/A		N/A	
Initial Purchase Date		11/1/2019		2/1/2020		11/1/2022	
Liquidity/Insurer		None		None		None	
Par Outstanding (\$m)		84.45		75.00		73.05	
Swap Notional (\$m)		84.45		75.00		73.05	
Date	67% of 1M LIBOR	Rate	Spread to 1M LIBOR	Rate	Spread to 1M LIBOR	Rate	Spread to 1M LIBOR
10/18/2017	0.83%	1.13%	0.30%	1.53%	0.70%	1.67%	0.84%
10/25/2017	0.83%	1.13%	0.30%	1.53%	0.70%	1.67%	0.84%
11/1/2017	0.83%	1.13%	0.30%	1.53%	0.70%	1.38%	0.55%
11/8/2017	0.83%	1.13%	0.30%	1.53%	0.70%	1.38%	0.55%
11/15/2017	0.85%	1.13%	0.29%	1.53%	0.69%	1.40%	0.55%
11/22/2017	0.88%	1.13%	0.25%	1.53%	0.65%	1.43%	0.55%

**TBTA General Revenue Bonds**

Issue		TBTA 2005B-4a		TBTA 2005B-4c		TBTA 2005B-4d	
Remarketing Agent		N/A		N/A		N/A	
Initial Purchase Date		2/1/2021		2/1/2019		12/1/2018	
Liquidity/Insurer		None		None		None	
Par Outstanding (\$m)		108.80		38.70		43.80	
Swap Notional (\$m)		108.80		38.70		43.80	
Date	67% of 1M LIBOR	Rate	Spread to 1M LIBOR	Rate	Spread to 1M LIBOR	Rate	Spread to 1M LIBOR
10/18/2017	0.83%	1.53%	0.70%	1.23%	0.40%	1.41%	0.58%
10/25/2017	0.83%	1.53%	0.70%	1.23%	0.40%	1.41%	0.58%
11/1/2017	0.83%	1.53%	0.70%	1.23%	0.40%	1.41%	0.58%
11/8/2017	0.83%	1.53%	0.70%	1.23%	0.40%	1.41%	0.58%
11/15/2017	0.85%	1.53%	0.69%	1.23%	0.39%	1.41%	0.57%
11/22/2017	0.88%	1.53%	0.65%	1.23%	0.35%	1.41%	0.53%

Issue		TBTA 2003B-2		TBTA 2008B-2	
Remarketing Agent		N/A		NA	
Initial Purchase Date		12/3/2019		11/15/2021	
Liquidity/Insurer		None		None	
Par Outstanding (\$m)		46.05		63.65	
Swap Notional (\$m)		11.52		None	
Date	67% of 1M LIBOR	Rate	Spread to 1M LIBOR	Rate	Spread to 1M LIBOR
10/18/2017	0.83%	1.18%	0.35%	1.33%	0.50%
10/25/2017	0.83%	1.18%	0.35%	1.33%	0.50%
11/1/2017	0.83%	1.18%	0.34%	1.33%	0.50%
11/8/2017	0.83%	1.18%	0.35%	1.33%	0.50%
11/15/2017	0.85%	1.18%	0.34%	1.33%	0.49%
11/22/2017	0.88%	1.18%	0.30%	1.33%	0.45%

Report Date 11/21/2017



**METROPOLITAN TRANSPORTATION AUTHORITY  
VARIABLE RATE: FLOATING RATE NOTES (SIFMA)  
RATE RESETS REPORT (Trailing 6-Weeks)**

**Transportation Revenue Bonds**

Issue		TRB 2012A-2		TRB 2012A-3		TRB 2014D-2		TRB 2015A-2	
Remarketing Agent		N/A		N/A		N/A		N/A	
Initial Purchase Date		06/01/19		04/01/19		11/15/2017		6/1/2020	
Liquidity/Insurer		None		None		None		None	
Par Outstanding (\$m)		50.00		50.00		165.00		250.00	
Swap Notional (\$m)		None		None		None		None	
Date	SIFMA	Rate	Spread to SIFMA	Rate	Spread to SIFMA	Rate	Spread to SIFMA	Rate	Spread to SIFMA
10/18/2017	0.91%	1.49%	0.58%	1.41%	0.50%	1.27%	0.36%	1.49%	0.58%
10/25/2017	0.92%	1.50%	0.58%	1.42%	0.50%	1.28%	0.36%	1.50%	0.58%
11/1/2017	0.92%	1.50%	0.58%	1.42%	0.50%	1.37%	0.45%	1.50%	0.58%
11/8/2017	0.92%	1.50%	0.58%	1.42%	0.50%	1.37%	0.45%	1.50%	0.58%
11/15/2017	0.94%	1.52%	0.58%	1.44%	0.50%	1.39%	0.45%	1.52%	0.58%
11/22/2017	0.96%	1.54%	0.58%	1.46%	0.50%	1.41%	0.45%	1.54%	0.58%

**Dedicated Tax Fund Bonds**

Issue		DTF 2002B-3a		DTF 2002B-3b		DTF 2002B-3c		DTF 2002B-3d	
Remarketing Agent		N/A		N/A		N/A		N/A	
Initial Purchase Date		11/01/17		11/01/18		11/01/19		11/01/20	
Liquidity/Insurer		None		None		None		None	
Par Outstanding (\$m)		46.60		48.60		50.70		15.90	
Swap Notional (\$m)		None		None		None		None	
Date	SIFMA	Rate	Spread to SIFMA	Rate	Spread to SIFMA	Rate	Spread to SIFMA	Rate	Spread to SIFMA
10/18/2017	0.91%	1.66%	0.75%	1.81%	0.90%	1.86%	0.95%	1.91%	1.00%
10/25/2017	0.92%	1.67%	0.75%	1.82%	0.90%	1.87%	0.95%	1.92%	1.00%
11/1/2017	0.92%	No longer outstanding.		1.82%	0.90%	1.87%	0.95%	1.92%	1.00%
11/8/2017	0.92%			1.82%	0.90%	1.87%	0.95%	1.92%	1.00%
11/15/2017	0.94%			1.84%	0.90%	1.89%	0.95%	1.94%	1.00%
11/22/2017	0.96%			1.86%	0.90%	1.91%	0.95%	1.96%	1.00%

Issue		DTF 2008A-2a		DTF 2008A-2b		DTF 2008B-3a		DTF 2008B-3c	
Remarketing Agent		N/A		N/A		N/A		N/A	
Initial Purchase Date		06/01/22		11/01/19		11/01/18		11/01/19	
Liquidity/Insurer		None		None		None		None	
Par Outstanding (\$m)		82.58		84.86		35.00		44.74	
Swap Notional (\$m)		81.02		83.47		None		None	
Date	SIFMA	Rate	Spread to SIFMA	Rate	Spread to SIFMA	Rate	Spread to SIFMA	Rate	Spread to SIFMA
10/18/2017	0.91%	1.36%	0.45%	1.49%	0.58%	1.28%	0.37%	1.36%	0.45%
10/25/2017	0.92%	1.37%	0.45%	1.50%	0.58%	1.29%	0.37%	1.37%	0.45%
11/1/2017	0.92%	1.37%	0.45%	1.50%	0.58%	1.29%	0.37%	1.37%	0.45%
11/8/2017	0.92%	1.37%	0.45%	1.50%	0.58%	1.29%	0.37%	1.37%	0.45%
11/15/2017	0.94%	1.39%	0.45%	1.52%	0.58%	1.31%	0.37%	1.39%	0.45%
11/22/2017	0.96%	1.41%	0.45%	1.54%	0.58%	1.33%	0.37%	1.41%	0.45%

**TBTA General Revenue Bonds**

Issue		TBTA SUB 2000ABCD-4		TBTA SUB 2000ABCD-5	
Remarketing Agent		N/A		N/A	
Initial Purchase Date		1/1/2018		1/1/2019	
Liquidity/Insurer		None		None	
Par Outstanding (\$m)		38.85		18.85	
Swap Notional (\$m)		22.99		11.15	
Date	SIFMA	Rate	Spread to SIFMA	Rate	Spread to SIFMA
10/18/2017	0.91%	1.26%	0.35%	1.35%	0.44%
10/25/2017	0.92%	1.27%	0.35%	1.36%	0.44%
11/1/2017	0.92%	1.27%	0.35%	1.36%	0.44%
11/8/2017	0.92%	1.27%	0.35%	1.36%	0.44%
11/15/2017	0.94%	1.29%	0.35%	1.38%	0.44%
11/22/2017	0.96%	1.31%	0.35%	1.40%	0.44%

Report Date 11/21/2017

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**VARIABLE RATE: DAILY MODE**  
**RATE RESETS REPORT (Trailing 10 Days)**

**Transportation Revenue Bonds**

Issue		TRB 2005D-2		TRB 2005E-1		TRB 2015E-1		TRB 2015E-5	
Dealer		Morgan Stanley		Jefferies		US Bancorp		US Bancorp	
Liquidity Provider		Helaba		Bank of Montreal		US Bank		US Bank	
Type of Liquidity		LoC		LoC		LoC		LoC	
Par Outstanding (\$m)		98.75		98.74		98.64		49.11	
Swap Notional (\$m)		98.75		59.24		None		None	
Date	SIFMA	Spread to		Spread to		Spread to		Spread to	
		Rate	SIFMA	Rate	SIFMA	Rate	SIFMA	Rate	SIFMA
11/15/2017	0.90%	0.92%	0.02%	0.93%	0.03%	0.94%	0.04%	0.94%	0.04%
11/16/2017	0.90%	0.91%	0.01%	0.95%	0.05%	0.94%	0.04%	0.94%	0.04%
11/17/2017	0.90%	0.92%	0.02%	0.95%	0.05%	0.94%	0.04%	0.94%	0.04%
11/18/2017	0.90%	0.92%	0.02%	0.95%	0.05%	0.94%	0.04%	0.94%	0.04%
11/19/2017	0.90%	0.92%	0.02%	0.95%	0.05%	0.94%	0.04%	0.94%	0.04%
11/20/2017	0.90%	0.91%	0.01%	0.94%	0.04%	0.94%	0.04%	0.94%	0.04%
11/21/2017	0.90%	0.94%	0.04%	0.94%	0.04%	0.94%	0.04%	0.94%	0.04%
11/22/2017	0.85%	0.96%	0.11%	0.94%	0.09%	0.93%	0.08%	0.93%	0.08%
11/23/2017	0.85%	0.96%	0.11%	0.94%	0.09%	0.93%	0.08%	0.93%	0.08%
11/24/2017	0.85%	0.97%	0.12%	0.92%	0.07%	0.93%	0.08%	0.93%	0.08%

**TBTA General Revenue Bonds**

**Dedicated Tax Fund Bonds**

Issue		TBTA 2002F		TBTA 2003B-3		TBTA 2005B-2		DTF 2008A-1	
Dealer		JP Morgan		US Bancorp		Wells Fargo		RBC Capital	
Liquidity Provider		Helaba		US. Bank		Wells Fargo		RBC	
Type of Liquidity		LoC		LoC		LoC		LoC	
Par Outstanding (\$m)		179.79		52.41		192.20		167.44	
Swap Notional (\$m)		179.79		1.31		192.20		164.49	
Date	SIFMA	Spread to		Spread to		Spread to		Spread to	
		Rate	SIFMA	Rate	SIFMA	Rate	SIFMA	Rate	SIFMA
11/15/2017	0.90%	0.99%	0.09%	0.91%	0.01%	0.91%	0.01%	0.92%	0.02%
11/16/2017	0.90%	1.00%	0.10%	0.92%	0.02%	0.92%	0.02%	0.92%	0.02%
11/17/2017	0.90%	1.00%	0.10%	0.92%	0.02%	0.92%	0.02%	0.93%	0.03%
11/18/2017	0.90%	1.00%	0.10%	0.92%	0.02%	0.92%	0.02%	0.93%	0.03%
11/19/2017	0.90%	1.00%	0.10%	0.92%	0.02%	0.92%	0.02%	0.93%	0.03%
11/20/2017	0.90%	1.00%	0.10%	0.91%	0.01%	0.91%	0.01%	0.93%	0.03%
11/21/2017	0.90%	1.00%	0.10%	0.90%	0.00%	0.90%	0.00%	0.92%	0.02%
11/22/2017	0.85%	1.00%	0.15%	0.90%	0.05%	0.90%	0.05%	0.92%	0.07%
11/23/2017	0.85%	1.00%	0.15%	0.90%	0.05%	0.90%	0.05%	0.92%	0.07%
11/24/2017	0.85%	1.00%	0.15%	0.91%	0.06%	0.91%	0.06%	0.93%	0.08%

Report Date 11/24/2017

## MTA DEBT OUTSTANDING (\$ in Millions)

10/31/2017

Type of Credit		Outstanding						Total Outstanding	TIC <sup>1</sup>	Notes
Underlying Ratings (Moody's / S&P / Fitch / Kroll)	Series	BPA Sale Date	Series Original Final Maturity	Principal Iss. Amount	Fixed Amount	Variable Amount	Synthetic Fixed Amount			
MTA Transportation Revenue Bonds (A1/AA-/AA-/AA+)	2002D	5/30/02	11/1/2032	400.000	174.725	-	200.000	374.725	4.48	
	2002G	11/20/02	11/1/2026	400.000	-	-	142.015	142.015	4.16	
	2003A	5/14/03	11/15/2032	475.340	86.330	-	-	86.330	4.49	
	2003B	8/13/03	11/15/2032	751.765	71.080	-	-	71.080	5.10	
	2005A	2/15/05	11/15/2035	650.000	26.050	-	-	26.050	4.76	
	2005B	7/1/05	11/15/2035	750.000	163.685	-	-	163.685	4.80	
	2005D	11/2/05	11/1/2035	250.000	-	-	237.925	237.925	4.31	
	2005E	11/2/05	11/1/2035	250.000	-	95.175	142.775	237.950	3.27	
	2005G	12/7/05	11/1/2026	250.000	77.435	-	-	77.435	4.34	
	2006B	12/20/06	11/15/2036	717.730	72.645	-	-	72.645	4.52	
	2007A	7/11/07	11/15/2037	425.615	10.015	-	-	10.015	4.84	
	2007B	12/13/07	11/15/2037	415.000	9.770	-	-	9.770	4.75	
	2008A	2/21/08	11/15/2038	512.470	49.460	-	-	49.460	4.91	
	2008B	2/21/08	11/15/2030	487.530	332.860	-	-	332.860	3.29	
	2008C	10/23/08	11/15/2028	550.000	117.240	-	-	117.240	6.68	
	2009A	10/15/09	11/15/2039	502.320	421.770	-	-	421.770	3.79	
	2010A	1/13/10	11/15/2039	363.945	363.945	-	-	363.945	4.44	
	2010B	2/11/10	11/15/2039	656.975	616.915	-	-	616.915	4.29	
	2010C	7/7/10	11/15/2040	510.485	457.135	-	-	457.135	4.27	
	2010D	12/7/10	11/15/2040	754.305	500.385	-	-	500.385	5.15	
	2010E	12/29/10	11/15/2040	750.000	750.000	-	-	750.000	4.57	
	2011A	7/20/11	11/15/2046	400.440	294.305	-	-	294.305	4.95	
	2011B	9/14/11	11/1/2041	99.560	-	43.340	56.220	99.560	2.52	
	2011C	11/10/11	11/15/2028	197.950	178.060	-	-	178.060	3.99	
	2011D	12/7/11	11/15/2046	480.165	316.540	-	-	316.540	4.57	
	2012A	3/15/12	11/15/2042	150.000	50.000	100.000	-	150.000	1.85	
	2012B	3/15/12	11/15/2039	250.000	225.175	-	-	225.175	3.85	
	2012C	5/3/12	11/15/2047	727.430	655.365	-	-	655.365	4.22	
	2012D	8/20/12	11/15/2032	1,263.365	920.790	-	-	920.790	3.51	
	2012E	7/20/12	11/15/2042	650.000	566.410	-	-	566.410	3.91	
	2012F	9/28/12	11/15/2030	1,268.445	1,087.070	-	-	1,087.070	3.17	
	2012G	11/13/12	11/1/2032	359.450	-	-	357.150	357.150	4.15	
	2012H	11/15/12	11/15/2042	350.000	314.535	-	-	314.535	3.70	
	2013A	1/24/13	11/15/2043	500.000	468.695	-	-	468.695	3.79	
	2013B	4/2/13	11/15/2043	500.000	415.050	-	-	415.050	4.08	
	2013C	6/11/13	11/15/2043	500.000	369.500	-	-	369.500	4.25	
	2013D	7/11/13	11/15/2043	333.790	316.190	-	-	316.190	4.63	
	2013E	11/15/13	11/15/2043	500.000	475.355	-	-	475.355	4.64	
	2014A	2/28/2014	11/15/2044	400.000	387.295	-	-	387.295	4.31	
	2014B	4/17/2014	11/15/2044	500.000	476.425	-	-	476.425	4.38	
	2014C	6/26/2014	11/15/2036	500.000	477.740	-	-	477.740	3.32	
	2014D	11/4/2014	11/15/2044	500.000	335.000	165.000	-	500.000	3.09	
	2015A	1/22/2015	11/15/2045	850.000	569.560	250.000	-	819.560	2.89	
	2015B	3/19/2015	11/15/2055	275.055	271.055	-	-	271.055	4.29	
	2015C	8/18/2015	11/15/2035	550.000	550.000	-	-	550.000	3.68	
	2015D	9/17/2015	11/15/2035	407.695	407.695	-	-	407.695	3.61	
	2015E	9/10/2015	11/15/2050	650.000	-	640.750	-	640.750	1.10	
	2015B BANS	12/10/2015	2/1/2018	700.000	12.000	-	-	12.000	0.55	
	2015F	12/17/2015	11/15/2036	330.430	330.430	-	-	330.430	3.21	
	2016A	2/25/2016	11/15/2056	782.520	779.420	-	-	779.420	3.54	
	2016B	6/30/2016	11/15/2037	673.990	673.990	-	-	673.990	2.90	
	2016C	7/28/2016	11/15/2056	863.860	863.860	-	-	863.860	3.52	
	2015X-1 (RRIF LOAN - PTC)	9/20/2016	11/15/2037	146.472	146.472	-	-	146.472	2.38	
	2016D	10/26/2016	11/15/2035	645.655	645.655	-	-	645.655	2.87	
	2017A	3/16/2017	11/15/2057	325.585	325.585	-	-	325.585	3.78	
	2017B BANS	6/29/2017	2/1/2018	500.000	500.000	-	-	500.000	0.88	
	2017B	9/28/2017	11/15/2028	662.025	662.025	-	-	662.025	1.98	
	2017C BANS	10/25/2017	5/15/2019	1,000.000	1,000.000	-	-	1,000.000	1.15	
	Total			30,617.362	20,368.692	1,294.265	1,136.085	22,799.042	3.52	
								WATIC		
TBTA General Revenue Bonds (Aa3/AA-/AA-/AA)	EFC 1996A	3/17/11	1/1/2018	28.445	0.325	-	-	0.325	5.85	
	2001B	12/19/01	1/1/2032	148.200	-	112.715	-	112.715	2.02	
	2001C	12/1/01	1/1/2032	148.200	-	55.235	57.475	112.710	2.89	
	2002F	11/13/02	11/1/2032	246.480	-	-	171.555	171.555	3.58	
	2003B	12/10/03	1/1/2033	250.000	-	163.130	11.515	174.645	1.86	
	2005A	5/11/05	11/1/2035	150.000	-	87.945	22.765	110.710	2.37	
	2005B	7/7/05	1/1/2032	800.000	-	-	573.900	573.900	3.73	
	2007A	6/20/07	11/15/2037	223.355	5.265	-	-	5.265	4.84	

**MTA DEBT OUTSTANDING (\$ in Millions)**
**10/31/2017**

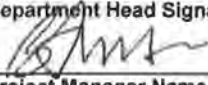

Type of Credit					Outstanding			Total	TIC <sup>1</sup>	Notes	
Underlying Ratings (Moody's / S&P / Fitch/ Kroll)	BPA Sale	Series Original	Principal Iss.	Fixed	Variable	Synthetic					
	Series	Date	Final Maturity	Amount	Amount	Amount	Fixed	Outstanding			
	2008A	3/27/08	11/15/2038	822.770	47.180	-	-	47.180	4.93		
	2008B	3/27/08	11/15/2038	252.230	142.715	63.650	-	206.365	3.41		
	2008C	7/30/08	11/15/2038	629.890	224.140	-	-	224.140	4.72		
	2009A	2/18/09	11/15/2038	475.000	285.895	-	-	285.895	4.63		
	2009B	9/17/09	11/15/2039	200.000	200.000	-	-	200.000	3.63		
	2010A	10/28/10	11/15/2040	346.960	310.575	-	-	310.575	3.45		
	2011A	10/13/11	1/1/2028	609.430	499.175	-	-	499.175	3.59		
	2012A	6/6/12	11/15/2042	231.490	200.875	-	-	200.875	3.69		
	2012B	8/23/12	11/15/2032	1,236.898	1,269.560	-	-	1,269.560	2.66		
	2013B	1/29/13	11/15/2030	257.195	257.195	-	-	257.195	2.25		
	2013C	4/18/13	11/15/2043	200.000	184.620	-	-	184.620	3.71		
	2014A	2/6/2014	11/15/2044	250.000	235.225	-	-	235.225	4.28		
	2015A	5/15/2015	11/15/2050	225.000	219.250	-	-	219.250	4.18		
	2015B	11/16/2015	11/15/2045	65.000	63.875	-	-	63.875	3.88		
	2016A	1/28/2016	11/15/2046	541.240	533.710	-	-	533.710	3.24		
	2017A	1/19/2017	11/15/2047	300.000	300.000	-	-	300.000	3.71		
	2017B	1/19/2017	11/15/2038	902.975	902.975	-	-	902.975	3.48		
	2017A BANS	10/6/2017	2/15/2018	400.000	400.000	-	-	400.000	1.23		
	Total				9,940.758	6,282.555	482.675	837.210	7,602.440	3.27	
								WATIC			
	TBTA Subordinate Revenue Bonds (A1/A+/A+/AA-)	2000ABCD	11/02/00	1/1/2019	263.000	-	23.550	34.150	57.700	4.58	
		2002E	11/13/02	11/15/2032	756.095	139.825	-	-	139.825	5.34	
		2008D	7/30/08	11/15/2028	491.110	206.440	-	-	206.440	4.69	
		2013A	1/29/13	11/15/2032	761.600	750.700	-	-	750.700	3.13	
		2013D Taxable	12/19/2013	11/15/2032	313.975	162.025	148.470	-	310.495	2.50	
Total				2,585.780	1,258.990	172.020	34.150	1,465.160	3.49		
							WATIC				
MTA Dedicated Tax Fund Bonds (NAF/AA/AA/NAF)	2002B	9/5/02	11/1/2022	440.000	-	265.200	-	265.200	2.04		
	2004A	3/10/04	11/15/2018	250.000	46.000	-	-	46.000	3.49		
	2004B	3/10/04	11/15/2028	500.000	151.010	-	-	151.010	4.51		
	2004C	12/21/04	11/15/2018	120.000	18.365	-	-	18.365	3.77		
	2008A	6/25/08	11/1/2031	352.915	-	5.590	326.860	332.450	3.85		
	2008B	8/7/08	11/1/2034	348.175	237.825	79.740	-	317.565	2.71		
	2009A	3/19/09	11/15/2039	261.700	5.375	-	-	5.375	5.55		
	2009B	4/30/09	11/15/2030	500.000	25.780	-	-	25.780	5.00		
	2009C	4/30/09	11/15/2039	750.000	750.000	-	-	750.000	4.89		
	2010A	3/25/10	11/15/2040	502.990	452.810	-	-	452.810	3.91		
	2011A	3/31/11	11/15/2021	127.450	58.455	-	-	58.455	2.99		
	2012A	10/25/12	11/15/2032	1,065.335	986.005	-	-	986.005	3.07		
	2016A	3/10/16	11/15/2036	579.995	577.695	-	-	577.695	2.98		
	2016B	5/26/16	11/15/2056	588.305	586.550	-	-	586.550	3.37		
	2017A	2/23/17	11/15/2047	312.825	312.825	-	-	312.825	3.97		
	2017B	5/17/17	11/15/2057	680.265	680.265	-	-	680.265	3.56		
	Total				7,379.955	4,888.960	350.530	326.860	5,566.350	3.55	
							WATIC				
All MTA Total				50,523.855	32,799.197	2,299.490	2,334.305	37,432.992	3.47		
State Service Contract Bonds (AA/AA)	2002A	6/5/02	7/1/2031	1,715.755	68.015	-	-	68.015	5.29		
	2002B	6/26/02	7/1/2031	679.450	-	-	-	-	0.00		
	Total				2,395.205	68.015	-	-	68.015	5.29	
							WATIC				
MTA Special Obligation Bonds Aaa	2014 Taxable	8/14/14	7/1/2026	348.910	277.705	-	-	277.705	2.66		
					348.910	277.705	-	-	277.705	2.66	
							WATIC				
MTA Hudson Rail Yards Trust Obligations <sup>2</sup> (A2/NAF/NAF/A-)	2016A	9/22/16	11/15/2056	1,057.430	1,057.430	-	-	1,057.430	4.28		
					1,057.430	1,057.430	-	-	1,057.430	4.28	
								WATIC			
Grand Total				54,325.400	34,202.347	2,299.490	2,334.305	38,836.142	3.49		

**Notes**

- (1) Fixed Rate TICs calculated as of issuance of Fixed Rate Bonds. Floating Rate TICs calculated from inception including fees.  
Any Unhedged Variable Rate Bonds that have been fixed to maturity are carried at the new Fixed Rate TIC. Synthetic Fixed Rate TICs include average swap rates plus current variable rate fees and estimated basis adjustments for life of swap. Synthetic Fixed Rate TICs do not include benefit of any upfront payments received by MTA. Variable Rate TICs include average remarketed plus current variable rate fees.
- (2) Assumes that no fee purchase options are exercised thru maturity. If all of the fee purchase options are exercised within 10 years, the All-in TIC would be 2.74%.



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# Staff Summary

<b>Subject</b>
Authorization to Issue New Money Transportation Revenue Bonds and Bond Anticipation Notes, and Triborough Bridge and Tunnel Authority General Revenue and Subordinate Revenue Bonds and Bond Anticipation Notes
<b>Department</b>
Finance
<b>Department Head Name</b>
Robert E. Foran, Chief Financial Officer
<b>Department Head Signature</b>

<b>Project Manager Name</b>
Patrick J. McCoy, Director, Finance 

<b>Date</b>
December 13, 2017
<b>Vendor Name</b>
<b>Contract Number</b>
<b>Contract Manager Name</b>
<b>Table of Contents Ref #</b>

Board Action					
Order	To	Date	Approval	Info	Other
1	Finance Comm.	12/11	X		
2	Board	12/13	X		

Internal Approvals			
Order	Approval	Order	Approval
1	Legal 	2	Chief of Staff 

## PURPOSE:

The MTA Finance Department is seeking MTA and TBTA Board authorization and approval of the necessary documentation to issue new money bond anticipation notes (BANs) and bonds to finance up to \$3,000 million of capital projects set forth in approved transit and commuter capital programs, and to issue up to \$200 million of new money bonds and BANs to finance capital projects set forth in approved bridges and tunnels capital programs. The MTA Finance Department will report to the Board on the status of the proposed debt issuance schedule, the results of each note and bond issue and planned note and bond issues.

## DISCUSSION:

MTA and TBTA Board approval is sought for the following resolutions, documents and activities in connection with the issuance of bonds and/or bond anticipation notes in an aggregate principal amount necessary to finance up to \$3.2 billion of capital projects of the transit and commuter systems and MTA Bridges & Tunnels set forth in approved capital programs:

- Separate Supplemental Resolutions authorizing Transportation Revenue Bonds (TRB Bonds) and Transportation Revenue BANs (TRB BANs), including providing for the following:
  - o The issuance of TRB BANs and TRB Bonds under the General Resolution Authorizing Transportation Revenue Obligations (the TRB Resolution), in one or more series from time to time, in an amount sufficient to produce net proceeds of up to \$3,000 million necessary to finance transit or commuter capital programs, plus applicable issuance costs and any original issue discount,
  - o Issuance of such TRB BANs or TRB Bonds in competitive or negotiated public sales, by direct placement or in connection with a revolving credit or other loan agreement, and
  - o The issuance of TRB Bonds under the TRB Resolution in an amount sufficient to (i) retire the TRB BANs when due and (ii) to finance transit or commuter capital programs, in each case plus accrued interest and applicable issuance costs and any original issue discount.
- Multiple Series 2018 Supplemental Resolution authorizing Triborough Bridge and Tunnel Authority General Revenue Obligations, including providing for the issuance of the following:

- o An aggregate principal amount of up to \$200 million of Triborough Bridge and Tunnel Authority General Revenue Obligations (reduced by any bonds issued under the Triborough Bridge and Tunnel Authority Subordinate Resolution) in one or more series necessary to finance capital projects of TBTA as set forth in existing MTA Bridges & Tunnels capital programs, plus applicable issuance costs and any original issue discount, and
- o Parity Reimbursement Obligations and other Parity Debt in an amount sufficient to secure any Credit Facilities entered into in connection with the issuance of the General Revenue Obligations.
- Multiple Series 2001 Subordinate Revenue Bond Supplemental Resolution authorizing Triborough Bridge and Tunnel Authority Subordinate Revenue Obligations, including providing for the issuance of the following:
  - o An aggregate principal amount of up to \$200 million of Triborough Bridge and Tunnel Authority Subordinate Revenue Obligations (reduced by any bonds issued under the Triborough Bridge and Tunnel Authority General Revenue Bond Resolution) in one or more series necessary to finance capital projects of TBTA, as set forth in existing MTA Bridges & Tunnels capital programs plus applicable issuance costs and any original issue discount, and
  - o Parity Reimbursement Obligations and other Parity Debt in an amount sufficient to secure any Credit Facilities entered into in connection with the issuance of the Subordinate Revenue Obligations.
- A Supplemental Resolution authorizing Triborough Bridge and Tunnel Authority General Revenue BANs (TBTA BANs), including providing for the following:
  - o The issuance of TBTA BANs under the Triborough Bridge and Tunnel Authority General Revenue Bond Resolution (the Resolution), in one or more series from time to time, in an amount sufficient to produce net proceeds of up to \$200 million necessary to finance capital projects of MTA Bridges and Tunnels, plus applicable issuance costs and any original issue discount,
  - o Issuance of such TBTA BANs in competitive or negotiated public sales, by direct placement or in connection with a revolving credit or other loan agreement, and
  - o The issuance of TBTA Bonds in an amount sufficient to (i) retire the TBTA BANs when due and (ii) to finance capital projects of MTA Bridges and Tunnels, in each case plus accrued interest and applicable issuance costs and any original issue discount.

With respect to the above-referenced financial transactions, MTA and TBTA Board approval, as applicable, is sought:

(a) delegating authority to the Chairman, the Managing Director, the Chair of the Finance Committee, the Vice Chairman, the Chief Financial Officer or the Director, Finance to award the obligations either pursuant to competitive bid or to members (or entities related to such firms) of the Board-approved MTA underwriting syndicate and to execute and/or deliver in each case, where appropriate:

- o Notices of Sale and bid forms,
- o Purchase Agreements with underwriters,
- o Direct Purchase Agreements,
- o Revolving Credit Agreements or other Loan Agreements,
- o Official Statements and other disclosure documents,
- o Continuing Disclosure Agreements and related filings,
- o Remarketing Agreements,
- o Dealer and Broker/Dealer Agreements,
- o Issuing and Paying Agent Agreements,
- o Credit Facilities and related Parity Reimbursement Obligations and Parity Debt,
- o Related Subordinated Contract Obligations, and
- o Investment Agreements.

Any such documents will be in substantially the form of any document previously entered into by MTA or TBTA for previous issues, with such changes as approved by any one or more of the foregoing officers.

(b) authorizing such officers to terminate, amend, supplement, replace or extend any such documents, including Credit Facilities (and related Parity Reimbursement Obligations and Parity Debt), as they shall deem advisable, and to take such other

actions as may be necessary or desirable to effectuate the issuance of the new money bonds and BANs and other financial transactions set forth above, on behalf of MTA, TBTA or other MTA subsidiaries and affiliates.

**ALTERNATIVES:**

There are no viable funding alternatives to the bond funded portion of existing approved capital programs.

**RECOMMENDATION:**

The MTA and TBTA Boards approve the above-referenced resolutions and documents and all other actions described above, including the execution and delivery of such other documents, and the taking of all other actions, from time to time deemed necessary or desirable by such officers in connection therewith. The authorization to issue the bonds and bond anticipation notes and take other related actions hereunder shall continue in effect without any further action by the MTA and TBTA Boards until the adoption by the MTA and TBTA Boards of subsequent bond supplemental resolutions relating to 2019 note and bond issues (except that bonds may still be issued to refinance 2018 BANs outstanding at any time) unless (a) the MTA and TBTA Boards shall have confirmed the effectiveness of this authorization for an additional period, or (b) the MTA and TBTA Boards shall have modified or repealed this authorization.



**METROPOLITAN TRANSPORTATION AUTHORITY**

**MULTIPLE SERIES 2018  
TRANSPORTATION REVENUE BOND SUPPLEMENTAL RESOLUTION**

**Adopted December 13, 2017**

**MULTIPLE SERIES 2018  
TRANSPORTATION REVENUE BOND  
SUPPLEMENTAL RESOLUTION**

BE IT RESOLVED by the Board of Metropolitan Transportation Authority (the “Issuer”), as follows:

**ARTICLE I**

**DEFINITIONS AND STATUTORY AUTHORITY**

**Section 1.01. Supplemental Resolution.** This resolution is supplemental to, and is adopted in accordance with Article II, Article A-II and Article A-VIII of, a resolution adopted by the Issuer on March 26, 2002, entitled “General Resolution Authorizing Transportation Revenue Obligations”, as heretofore supplemented (the “Resolution”).

**Section 1.02. Definitions.**

1. All terms which are defined in Section 101 of the Resolution shall have the same meanings, respectively, in this Multiple Series 2018 Transportation Revenue Bond Supplemental Resolution (hereinafter referred to as the “Supplemental Resolution”) as such terms are given in said Section 101 of the Resolution.

2. In this Supplemental Resolution:

“Authorized Officer” shall include the officers designated as such in the Resolution, and the Chairman, the Managing Director, the Chair of the Finance Committee, the Vice Chairman, the Chief Financial Officer or the Director, Finance of the MTA, as well as any officer duly designated as “Acting” in said officer’s capacity, except that, for the purposes of any delegation set forth herein that does not expressly include any Assistant Secretary, “Authorized Officer” shall not include any Assistant Secretary of the Issuer.

“Board” shall mean, when used with respect to the Issuer, the board of the Issuer acting as such pursuant to the provisions of the Issuer Act.

“Bond Counsel” shall mean Nixon Peabody LLP, Orrick, Herrington & Sutcliffe LLP, D. Seaton and Associates, P.A., P.C., Bryant Rabbino LLP or any other attorney or firm of attorneys of nationally recognized standing in the field of law relating to the issuance of obligations by state and municipal entities, selected by the Issuer.

“Code” shall mean the Internal Revenue Code of 1986, as amended, and regulations thereunder.

“Series 2018 Bonds” shall mean the Transportation Revenue Bonds, Series 2018, authorized by Article II of this Supplemental Resolution.

“Series 2018 Notes” shall mean the Transportation Revenue Bond Anticipation Notes, Series 2018, authorized to be issued in one or more Series or subseries in accordance with Section A-203 of the Standard Resolution Provisions and pursuant to a Supplemental Resolution of the Issuer adopted as of the date that this Supplemental Resolution is adopted.

**Section 1.03. Authority for this Supplemental Resolution.** This Supplemental Resolution is adopted pursuant to the provisions of the Issuer Act and the Resolution.

## **ARTICLE II**

### **AUTHORIZATION OF SERIES 2018 BONDS**

**Section 2.01. Principal Amount, Designation and Series.** Pursuant to the provisions of the Resolution and in order to finance Capital Costs, a Series of General Revenue Bonds (which may be issued in one or more Series or subseries and from time to time, which for purposes of this Supplemental Resolution shall collectively be referred to herein as the “Series 2018 Bonds”, subject to redesignation as hereinafter provided) entitled to the benefit, protection and security of such provisions are hereby authorized to be issued in an aggregate principal amount not exceeding the principal amount necessary so that, after giving effect to any net original issue discount and underwriters’ discount from the principal amount, the amount to be deposited in the Proceeds Account pursuant to, or otherwise applied to effectuate the purposes of, Section 2.02 and Section 3.01 of this Supplemental Resolution (exclusive of the amount so deposited therein determined in any Certificate of Determination as estimated to be necessary to pay capitalized interest or to pay any Costs of Issuance of the Series 2018 Bonds), shall not exceed the amount or amounts determined in a Certificate of Determination to be necessary to effectuate the purposes set forth in Section 2.02 hereof; provided, however, that the Series 2018 Bonds issued to finance Capital Costs shall not exceed \$3,000 million at any one time Outstanding reduced by the amount of bond anticipation notes (the “Series 2018 Notes”) issued under the Metropolitan Transportation Authority Multiple Series 2018 Bond Anticipation Notes and Related Subordinated Indebtedness Transportation Revenue Bond Supplemental Resolution, adopted December 13, 2017 (but, for purposes of clarification, not including both the Series 2018 Notes and Series 2018 Bonds issued thereunder to refinance Series 2018 Notes). For all purposes of this Section 2.01, net original issue premium as determined to be advisable by an Authorized Officer in connection with the marketing of the Series 2018 Bonds also shall be excluded.

Series 2018 Bonds shall be designated as, and shall be distinguished from the Obligations of all other Series by the title “Transportation Revenue Bonds, Series 2018” or such other title or titles set forth in one or more Certificates of Determination.

The authority to issue the Bonds and take related actions granted under previous resolutions of the Issuer shall continue in full force and effect. The authorization to issue the Series 2018 Bonds shall continue in effect until the adoption by the Issuer Board of a subsequent new money bond issuance supplemental resolution relating to 2019 new money financings, provided, however, the authorization to issue the Series 2018 Bonds to refinance the Series 2018 Notes shall continue in effect until all of such Series 2018 Notes have been refinanced by Series 2018 Bonds.

**Section 2.02. Purposes.** The purposes for which the Series 2018 Bonds are issued shall be set forth in one or more Certificates of Determination and may include (i) the payment of all or any part of the Capital Costs, and (ii) the payment of principal of and redemption premium, if any, and interest on Outstanding Series 2018 Notes.

**Section 2.03. Date, Maturity and Interest for Series 2018 Bonds.** The Series 2018 Bonds, except as otherwise provided in the Resolution, shall be dated the date or dates determined in the related Certificate of Determination. The Series 2018 Bonds shall mature on the date or dates and in the year or years and principal amount or amounts, and shall bear interest at the rate or rates per annum, if any, determined in any Certificate of Determination.

**Section 2.04. Interest Payments.** The Series 2018 Bonds shall bear interest from their date or dates and be payable on such date or dates as may be determined pursuant to the related Certificate of Determination. Except as otherwise provided in the related Certificate of Determination, interest on the Series 2018 Bonds shall be computed on the basis of twelve 30-day months and a 360-day year.

**Section 2.05. Denominations, Numbers and Letters.** Unless otherwise provided in the related Certificate of Determination, the Series 2018 Bonds shall be issued in fully registered form without coupons in the denomination of \$5,000 or any integral multiple thereof. The Series 2018 Bonds shall be numbered and lettered as provided in any Certificate of Determination.

**Section 2.06. Places of Payment and Paying Agents.** Except as otherwise provided in any Certificate of Determination, principal and Redemption Price of the Series 2018 Bonds shall be payable to the registered owner of each Series 2018 Bond when due upon presentation of such Series 2018 Bond at the principal corporate trust office of the Trustee. Except as otherwise provided in the related Certificate of Determination, interest on the registered Series 2018 Bonds will be paid by check or draft mailed on the interest payment date by the Paying Agent, to the registered owner at his address as it appears on the registration books or, at the option of any Owner of at least one million dollars (\$1,000,000) in principal amount of the Series 2018 Bonds, by wire transfer in immediately available funds on each interest payment date to such Owner thereof upon written notice from such Owner to the Trustee, at such address as the Trustee may from time to time notify such Owner, containing the wire transfer address (which shall be in the continental United States) to which such Owner wishes to have such wire directed, if such written notice is received not less than twenty (20) days prior to the related interest payment date (such notice may refer to multiple interest payments).

**Section 2.07. Sinking Fund Installments.** The Series 2018 Bonds, if any, determined in the related Certificate of Determination shall be subject to redemption in part, by lot, or otherwise as determined in accordance with Section A-404 of the Resolution, on each date in the year or years determined in the related Certificate of Determination at the principal amount thereof plus accrued interest up to but not including the date of redemption thereof, from mandatory Sinking Fund Installments which are required to be made in amounts sufficient to redeem on each such date the principal amount of such Series 2018 Bonds.

**Section 2.08. Redemption Prices and Terms.** The Series 2018 Bonds may also be subject to redemption prior to maturity, at the option of the Issuer, upon notice as provided in

Article A-IV of the Resolution, at any time as a whole or in part (and by lot within a maturity, or otherwise as determined in accordance with Section A-404 of the Resolution, if less than all of a maturity is to be redeemed), from maturities designated by the Issuer on and after the date and in the years and at the Redemption Prices (expressed as a percentage of principal amount) determined in the related Certificate of Determination, plus accrued interest up to but not including the redemption date. Notwithstanding the foregoing, in the case of taxable Series 2018 Bonds, if set forth in the Certificate of Determination, the taxable Series 2018 Bonds may be made subject to pro rata redemption and/or a make-whole redemption premium.

**Section 2.09. Delegation to an Authorized Officer.** 1. There is hereby delegated to each Authorized Officer, subject to the limitations contained in this Supplemental Resolution, the following powers with respect to the Series 2018 Bonds:

(a) to determine whether and when to issue any Series 2018 Bonds constituting Capital Cost Obligations, the amount of the Series 2018 Bonds to be applied to finance Capital Costs or other uses as provided in Section 2.02 hereof, and the amount of the proceeds of the Series 2018 Bonds estimated to be necessary to pay the Costs of Issuance of the Series 2018 Bonds and capitalized interest, if any;

(b) to determine the purpose or purposes for which the Series 2018 Bonds are being issued, which shall be one or more of the purposes set forth in Section 2.02 of this Supplemental Resolution;

(c) to determine the principal amounts of the Series 2018 Bonds to be issued for the purposes set forth in Section 2.02 of this Supplemental Resolution and whether such principal amounts constitute a separate Series or a subseries of Series 2018 Bonds, which principal amounts (and the aggregate of all such Series and subseries) shall not exceed the principal amounts permitted by Section 2.01 of this Supplemental Resolution, and to determine Accreted Values and Appreciated Values, if applicable;

(d) to determine the maturity date and principal amount of each maturity of the Series 2018 Bonds and the amount and due date of each Sinking Fund Installment, if any;

(e) to determine the date or dates which the Series 2018 Bonds shall be dated and the interest rate or rates of the Series 2018 Bonds or the manner of determining such interest rate or rates; provided, however, that any Series 2018 Bonds issued as fixed rate Tax-Exempt Obligations shall be subject to a maximum interest rate of not greater than 10% per annum, any Series 2018 Bonds issued as fixed rate Taxable Obligations shall be subject to a maximum interest rate of not greater than 12% per annum, any Variable Interest Rate Obligations issued as Tax-Exempt Obligations shall be subject to a maximum interest rate of not greater than 15% per annum, any Variable Interest Rate Obligations issued as Taxable Obligations shall be subject to a maximum interest rate of not greater than 18% per annum and any Parity Reimbursement Obligations shall be subject to a maximum interest rate of not greater than 25% per annum, or, in each such case, such higher rate or rates as determined by the Issuer's Board;

(f) to determine the Redemption Price or Redemption Prices, if any, and the redemption terms, if any, for the Series 2018 Bonds; provided, however, that if the Series 2018 Bonds are to be redeemable at the election of the Issuer, the Redemption Price (except in the case of taxable Series 2018 Bonds) shall not be greater than one hundred three percent (103%) of the principal amount of the Series 2018 Bonds to be redeemed, plus accrued interest thereon up to but not including the date of redemption and in the case of taxable Series 2018 Bonds the Redemption Price may be determined pursuant to provisions relating to pro rata redemption and/or make-whole redemption;

(g) to determine whether the sale of the Series 2018 Bonds shall be conducted on either a negotiated or competitive bid basis and, as applicable, to determine the purchase price for the Series 2018 Bonds to be paid by the purchaser or purchasers referred to in one or more Purchase Agreements or a bank direct purchase agreement, the purchase price for the Series 2018 Bonds to be paid by the winning bidder, if such sale is conducted by competitive bid pursuant to a Notice of Sale (as hereinafter defined), in either case as such document is described in Section 2.10 of this Supplemental Resolution, which may include such original issue discount and original issue premium as shall be determined in the related Certificate of Determination; provided, however, that, in the case of Series 2018 Bonds sold on a negotiated basis, the underwriters' discount reflected in such purchase price shall not exceed \$10.00 for each one thousand dollars (\$1,000) principal amount of the Series 2018 Bonds;

(h) to take all actions required for the Series 2018 Bonds to be eligible under the rules and regulations of The Depository Trust Company ("DTC") for investment and trading as uncertificated securities, to execute and deliver a standard form of letter of representation with DTC and, notwithstanding any provisions to the contrary contained in this Supplemental Resolution, to include in the related Certificate of Determination such terms and provisions as may be appropriate or necessary to provide for uncertificated securities in lieu of Series 2018 Bonds issuable in fully registered form;

(i) to determine whether to issue all or any portion of the Series 2018 Bonds as Tax-Exempt Obligations, Taxable Obligations, Put Obligations, Variable Interest Rate Obligations or as any other form of Obligations permitted by the Resolution and any matters related thereto, including (i) the terms and provisions of any such Series 2018 Bonds, (ii) the selection of remarketing agents, tender agents, calculation agents, auction agents, dealers, bidding agents or any other agents or parties to ancillary arrangements and the terms of any such arrangements, and (iii) the methods for determining the accrual of Debt Service;

(j) to determine the advisability, as compared to an unenhanced transaction, of obtaining one or more Credit Facilities, to select a provider or providers thereof and to determine and accept the terms and provisions and price thereof, to determine such other matters related thereto as in the opinion of the officer executing the related Certificate of Determination shall be considered necessary or appropriate and to effect such determinations by making any changes in or additions to this Supplemental Resolution required by Credit Facility providers, if any, or required by a Rating Agency in order to attain or maintain specific ratings on the Series 2018 Bonds, or relating to the

mechanisms for the repayment of amounts advanced thereunder or payment of fees, premiums, expenses or any other amounts, notices, the provision of information, and such other matters of a technical, mechanical, procedural or descriptive nature necessary or appropriate to obtain or implement a Credit Facility with respect to the Series 2018 Bonds, and to make any changes in connection therewith;

(k) to make such changes in or from the form of this Supplemental Resolution as may be required by a Rating Agency in order to attain or maintain specific ratings on the Series 2018 Bonds;

(l) to make such changes in or from the form of this Supplemental Resolution as may be necessary or desirable in order to cure any ambiguities, inconsistencies or other defects; and

(m) to determine such other matters specified in or permitted by (i) Sections 202, 203, and A-201 of the Resolution or (ii) this Supplemental Resolution, including preparation of any documentation therefor.

2. Any Authorized Officer shall execute one or more Certificates of Determination evidencing the determinations made pursuant to this Supplemental Resolution and any such Certificate of Determination shall be conclusive evidence of the determinations of such Authorized Officer, as stated therein. More than one Certificate of Determination may be delivered to the extent more than one Series or subseries of Series 2018 Bonds are delivered from time to time, or other authority is exercised under this Supplemental Resolution from time to time and each such Certificate of Determination shall be delivered to the Trustee prior to the authentication and delivery of the respective Series or subseries of Series 2018 Bonds by the Trustee or other documentation. Determinations set forth in the related Certificate of Determination shall have the same effect as if set forth in this Supplemental Resolution. Any such Authorized Officer may exercise any authority delegated under this Supplemental Resolution from time to time following issuance of any Series 2018 Bonds, as appropriate for any purposes, including, in order to change interest rate modes or auction periods, obtain a substitute or additional Credit Facility, enter into a bank direct purchase agreement or similar instrument, or to appoint new or additional agents or other parties deemed appropriate to a particular form or mode of Obligation or manner of sale.

**Section 2.10. Sale of Series 2018 Bonds.** Each Authorized Officer is hereby authorized either (i) to sell and award all or any portion of the Series 2018 Bonds through a competitive bidding process to purchasers meeting the requirements of one or more Notices of Sale (as hereinafter defined) to be published in order to give notice of the competitive sale of the Series 2018 Bonds; (ii) to sell and award all or any portion of the Series 2018 Bonds through a negotiated sale to the purchasers who are referred to in the bond purchase agreement and who shall be selected from the then current list of approved underwriters; or (iii) to sell and award all or any portion of the Series 2018 Bonds through a direct sale to the financial institution or institutions selected by the Authorized Officer who shall be referred to in the continuing covenant, direct purchase or similar agreement. Each Authorized Officer is hereby authorized to sell and award the Series 2018 Bonds to the purchasers referred to in the preceding sentence in the case of a bond purchase agreement, in substantially the form most recently executed or

delivered by the Issuer in connection with the sale of Obligations, or, with respect to a continuing covenant, direct purchase or similar agreement, containing bank facility terms and provisions (including, without limitation, increased costs, term-out, events of default and remedies) in substantially the form set forth in a letter of credit reimbursement agreement most recently executed or delivered by the Issuer, including, if applicable, that the direct purchaser offer to the Issuer a term-out provision of no less than five years, with such revisions to reflect the terms and provisions of the Series 2018 Bonds as may be approved by the officer executing the bond purchase, continuing covenant or similar agreement (each, a "Purchase Agreement"). Each Authorized Officer is hereby authorized to agree to the selection of the representative of the underwriters or the other purchasers or facility providers as referred to in the Purchase Agreement or Agreements and to execute and deliver the Purchase Agreement or Agreements for and on behalf and in the name of the Issuer with such changes, omissions, insertions and revisions as may be approved by the officer executing the Purchase Agreement or Agreements, said execution being conclusive evidence of such approval and concurrence in the selection of the representative of the underwriters.

If it is determined that any sale of Series 2018 Bonds shall be conducted on a competitive bid basis, each Authorized Officer is hereby further authorized to conduct the sale and award of the Series 2018 Bonds on the basis of a competitive bid, pursuant to the terms of a notice of sale, including bid form (the "Notice of Sale"), in a form, including any limitations on permitted bidders and a description of the basis for determining the winning bidder or bidders, determined by such Authorized Officer. Each Authorized Officer is hereby authorized to conduct such competitive sale of the Series 2018 Bonds in a manner consistent with this Supplemental Resolution and to utilize the services of the Authority's financial advisor and the services of an electronic bidding service, as such Authorized Officer shall determine, and the execution by such Authorized Officer of a letter of award shall be conclusive evidence of such award.

Each Authorized Officer is hereby authorized to make public and to authorize the use and distribution by said purchasers or other appropriate parties of a preliminary official statement, offering circular, or other disclosure document (the "Preliminary Official Statement") in connection with each public offering or any direct or private placement of the Series 2018 Bonds, in substantially the form most recently executed or delivered by the Issuer in connection with the sale of Obligations, with such changes, omissions, insertions and revisions as such officer shall deem advisable. The Issuer authorizes any of said officers to deliver a certification to the effect that such Preliminary Official Statement or Official Statement, if deemed necessary or appropriate, together with such other documents, if any, described in such certificate, was deemed final as of its date for purposes of Rule 15c2-12 of the Securities and Exchange Commission as applicable.

Each Authorized Officer is hereby authorized to make public and to authorize distribution of a final Official Statement in substantially the form of each Preliminary Official Statement or the most recently executed and delivered Official Statement if there is not a Preliminary Official Statement, with such changes, omissions, insertions and revisions as such officer shall deem advisable, to sign such Official Statement and to deliver such Official Statement to the purchasers of such issue of the Series 2018 Bonds, such execution being conclusive evidence of the approval of such changes, omissions, insertions and revisions.



Each Authorized Officer is hereby authorized to execute and deliver for and on behalf and in the name of the Issuer, to the extent determined by such Authorized Officer to be necessary or convenient, a Continuing Disclosure Agreement, substantially in the form appended to the Purchase Agreement or Notice of Sale, with such changes, omissions, insertions and revisions as such officer shall deem advisable (the “Continuing Disclosure Agreement”), said execution being conclusive evidence of the approval of such changes, omissions, insertions and revisions.

The proceeds of each good faith check, if any, received by the Issuer from the purchasers of each issue of the Series 2018 Bonds under the terms of the related Purchase Agreement or Notice of Sale may be invested by the Issuer pending application of the proceeds of such good faith check for the purposes provided in Section 2.02 of this Supplemental Resolution at the time of the issuance and delivery of such Series 2018 Bonds.

Each Authorized Officer (including any Assistant Secretary of the Issuer) is hereby authorized and directed to execute, deliver, amend, replace or terminate any and all documents and instruments (including any remarketing agreements, dealer agreements, broker dealer agreements, tender agent agreements, or auction agency agreements, any investment agreements or arrangements, or any reimbursement agreements or documents or instruments relating to a Credit Facility deemed appropriate to a given form or mode of an Obligation) and to do and cause to be done any and all acts necessary or proper for carrying out each Purchase Agreement or Notice of Sale, the Continuing Disclosure Agreement, the terms of any Credit Facility or other such agreement or arrangement, and the issuance, sale and delivery of the Series 2018 Bonds and for implementing the terms of the Series 2018 Bonds and the transactions contemplated hereby or thereby.

When reference is made in this Supplemental Resolution to the authorization of an Authorized Officer to do any act, such act may be accomplished by any of such officers individually.

**Section 2.11. Forms of Series 2018 Bonds and Trustee’s Authentication Certificate.** Subject to the provisions of the Resolution, the form of registered Series 2018 Bonds, and the Trustee’s certificate of authentication, shall be substantially in the form set forth in Exhibit One to the Resolution including, if necessary, any changes to comply with the requirements of DTC or the provisions of this Supplemental Resolution or any Certificate of Determination.

**Section 2.12. Appointment of Trustee and Paying Agent.** Unless otherwise provided by any Certificate of Determination, The Bank of New York Mellon, as successor in interest to JPMorgan Chase Bank, N.A., shall be the Trustee under the Resolution and the Paying Agent for the Series 2018 Bonds.

## ARTICLE III

### DISPOSITION AND ALLOCATION OF SERIES 2018 BOND PROCEEDS

**Section 3.01. Disposition and Allocation of Series 2018 Bond Proceeds.** Any proceeds of the sale of the Series 2018 Bonds, other than accrued interest and capitalized interest, if any, shall be disposed of or applied, simultaneously with the issuance and delivery of the Series 2018 Bonds, in the following order, or shall otherwise be disposed of or applied pursuant to the related Certificate of Determination to:

1. the payment of Capital Costs or the payment of principal of and redemption premium, if any, and interest on the Series 2018 Notes; and
2. the balance of such proceeds, exclusive of accrued interest, shall be deposited in the Series 2018 Bond Proceeds Account which is hereby established in the Proceeds Fund and applied to the payment of Costs of Issuance or otherwise applied to the payment of Costs of Issuance.

**Section 3.02.** Unless otherwise provided in the related Certificate of Determination, the accrued interest and capitalized interest, if any, received on the sale of the Series 2018 Bonds shall be deposited in the Debt Service Fund.

## ARTICLE IV

### TAX COVENANT PROVISIONS AND DEFEASANCE

**Section 4.01. Tax Covenants Relating to the Series 2018 Bonds.** The Issuer covenants that, in order to maintain the exclusion from gross income for Federal income tax purposes of the interest on the Series 2018 Bonds issued as Tax-Exempt Obligations, the Issuer will satisfy, or take such actions as are necessary to cause to be satisfied, each provision of the Code necessary to maintain such exclusion. In furtherance of this covenant, the Issuer agrees to comply with such written instructions as may be provided by Bond Counsel. In furtherance of the covenant contained in the preceding sentence, the Issuer agrees to continually comply with the provisions of any "Arbitrage and Use of Proceeds Certificate" or "Tax Certificate" to be executed by the Issuer in connection with the execution and delivery of any Series 2018 Bonds issued as Tax-Exempt Obligations, as amended from time to time.

Notwithstanding any other provision of the Resolution to the contrary, upon the Issuer's failure to observe, or refusal to comply with, the above covenant (a) the Owners of the Series 2018 Bonds, or the Trustee acting on their behalf, shall be entitled to the rights and remedies provided to Owners or the Trustee under Section 702 of the Resolution, and (b) neither the Owners of the Obligations of any Series or holders of any Parity Debt (other than the Series 2018 Bonds or the Trustee acting on their behalf), nor the Trustee acting on their behalf, shall be entitled to exercise any right or remedy provided to the Owners, the Parity Debt holders or the Trustee under the Resolution based upon the Issuer's failure to observe, or refusal to comply with, the above covenant.

**Section 4.02. Defeasance.** In the event the Issuer shall seek, prior to the maturity or redemption date thereof, to pay or cause to be paid, within the meaning and with the effect expressed in the Resolution, all or less than all Outstanding Series 2018 Bonds issued as Tax-Exempt Obligations and the provisions of Section 4.01 hereof shall then be of any force or effect, then, notwithstanding the provisions of Article A-XI of the Resolution, the Series 2018 Bonds issued as Tax-Exempt Obligations which the Issuer then seeks to pay or cause to be paid shall not be deemed to have been paid within the meaning and with the effect expressed in Section A-1101 of the Resolution unless (i) the Issuer has confirmed in writing that the Owners of the Series 2018 Bonds issued as Tax-Exempt Obligations which the Issuer then seeks to pay or cause to be paid will continue, after such action, to have the benefit of a covenant to the effect of the covenant of the Issuer contained in Section 4.01 hereof or (ii) there shall have been delivered to the Trustee an Opinion of Bond Counsel to the effect that non-compliance thereafter with the applicable provisions of the Code will not affect the then current treatment of interest on the Series 2018 Bonds issued as Tax-Exempt Obligations in determining gross income for Federal income tax purposes.

**METROPOLITAN TRANSPORTATION AUTHORITY**

**MULTIPLE SERIES 2018 BOND ANTICIPATION NOTES  
AND RELATED SUBORDINATED INDEBTEDNESS  
TRANSPORTATION REVENUE BOND SUPPLEMENTAL RESOLUTION**

**Adopted December 13, 2017**

**MULTIPLE SERIES 2018 BOND ANTICIPATION NOTES AND  
RELATED SUBORDINATED INDEBTEDNESS  
TRANSPORTATION REVENUE BOND SUPPLEMENTAL RESOLUTION**

BE IT RESOLVED by the Board of Metropolitan Transportation Authority (the “Issuer”), as follows:

**ARTICLE I  
DEFINITIONS AND STATUTORY AUTHORITY**

**SECTION 1.01. Supplemental Resolution.** This resolution is supplemental to, and is adopted in accordance with Article II, Article A-II and Article A-VIII of, a resolution adopted by the Issuer on March 26, 2002, entitled “General Resolution Authorizing Transportation Revenue Obligations”, as heretofore supplemented (the “Resolution”).

**SECTION 1.02. Definitions.**

1. All terms which are defined in Section 101 of the Resolution shall have the same meanings, respectively, in this Multiple Series 2018 Bond Anticipation Notes and Related Subordinated Indebtedness Transportation Revenue Bond Supplemental Resolution (hereinafter referred to as the “Supplemental Resolution”) as such terms are given in said Section 101 of the Resolution.

2. In this Supplemental Resolution:

“Authorized Officer” shall include the officers designated as such in the Resolution, and the Chairman, the Managing Director, the Chair of the Finance Committee, the Vice Chairman, the Chief Financial Officer or the Director, Finance of the MTA, as well as any officer duly designated as “Acting” in said officer’s capacity, except that, for the purposes of any delegation set forth herein that does not expressly include any Assistant Secretary, “Authorized Officer” shall not include any Assistant Secretary of the Issuer.

“Board” shall mean, when used with respect to the Issuer, the board of the Issuer acting as such pursuant to the provisions of the Issuer Act.

“Bond Counsel” shall mean Nixon Peabody LLP, Orrick, Herrington & Sutcliffe LLP, D. Seaton and Associates, P.A., P.C., Bryant Rabbino LLP or any other attorney or firm of attorneys of nationally recognized standing in the field of law relating to the issuance of obligations by state and municipal entities, selected by the Issuer.

“Code” shall mean the Internal Revenue Code of 1986, as amended, and regulations thereunder.

“Noteholder”, “Holder” or “Holder of Notes”, or any similar term, means any person who shall be the registered owner of any Outstanding Series 2018 Note or Notes.

“Notice of Sale” shall mean the form of Notice of Sale to be distributed with the Preliminary Official Statement, hereinafter defined, and published in the event of a competitive sale of the Series 2018 Notes.

“Series 2018 Bonds” shall mean the Transportation Revenue Bonds, Series 2018, authorized by Article II of the Resolution and pursuant to a resolution of the Issuer adopted as of the date that this resolution is adopted.

“Series 2018 Notes” shall mean the Transportation Revenue Bond Anticipation Notes, Series 2018, authorized to be issued, in accordance with Section A-203 of the Standard Resolution Provisions, pursuant to this Supplemental Resolution.

**SECTION 1.03. Authority for this Supplemental Resolution.** This Supplemental Resolution is adopted pursuant to the provisions of the Issuer Act and the Resolution.

## **ARTICLE II AUTHORIZATION OF SERIES 2018 NOTES**

**SECTION 2.01. Principal Amount, Designation and Series.** In accordance with the provisions of the Resolution, one or more Series of Transportation Revenue Bond Anticipation Notes constituting Obligation Anticipation Notes under the Resolution (which may be issued in one or more Series or subseries and from time to time, which for purposes of this Supplemental Resolution shall collectively be referred to herein as the “Series 2018 Notes”, subject to redesignation as hereinafter provided) and entitled to the benefit, protection and security of this Supplemental Resolution are hereby authorized to be issued in an aggregate principal amount not exceeding the principal amount necessary so that, after giving effect to any net original issue discount and underwriters’ discount from the principal amount, the amount to be deposited in the Series 2018 Note Proceeds Account pursuant to, or otherwise applied to effectuate the purposes of, Section 2.02 and Section 3.01 of this Supplemental Resolution (exclusive of the amount so deposited therein determined in any Certificate of Determination as estimated to be necessary to pay capitalized interest or to pay any Costs of Issuance of the Series 2018 Notes), shall not exceed \$3,000 million at any one time Outstanding reduced by the amount of bonds issued under the Metropolitan Transportation Authority Multiple Series 2018 Transportation Revenue Bond Supplemental Resolution, adopted December 13, 2017 (but, for purposes of clarification, not including both the Series 2018 Notes and Series 2018 Bonds issued thereunder to refinance Series 2018 Notes). The Series 2018 Notes may be issued in the form of a loan agreement, line of credit, revolving credit agreement or similar facility (each, a “Loan Facility”). For all purposes of this Section such Transportation Revenue Bond Anticipation Notes shall be designated as, and shall be distinguished from the Transportation Revenue Bond Anticipation Notes of all other Series by the title, “Transportation Revenue Bond Anticipation Notes, Series 2018”, with such further or different designations as may be provided in any Certificate of Determination.

The authority to issue Obligation Anticipation Notes and take related actions granted under previous resolutions of the Issuer shall continue in full force and effect. The authorization to issue the Series 2018 Notes shall continue in effect until the adoption by the Issuer’s Board of a subsequent new money note issuance supplemental resolution relating to 2019 new money financings, provided, however, the authorization to issue the Series 2018 Bonds to refinance the Series 2018 Notes authorized hereunder shall continue in effect until all of such Series 2018 Notes have been refinanced by Series 2018 Bonds.

**SECTION 2.02. Use of Proceeds.** The proceeds of the Series 2018 Notes shall be used only for the purposes set forth in one or more Certificates of Determination and may include (i) the payment of all or any part of the Capital Costs, including Costs of Issuance related to the Series 2018 Notes and (ii) the payment of the principal and interest of Outstanding Series 2018 Notes.

**SECTION 2.03. Date, Maturity and Interest for Series 2018 Notes; Redemption.** The Series 2018 Notes shall be dated the date or dates determined in any Certificate of Determination. The Series 2018 Notes shall mature on the date or dates and in the principal amount or amounts, and shall bear interest at the rate or rates per annum, if any, determined in any Certificate of Determination. Except as otherwise provided in any Certificate of Determination, the Series 2018 Notes shall not be subject to redemption prior to maturity.

**SECTION 2.04. Interest Payments.** The Series 2018 Notes shall bear interest from the dates determined in any Certificate of Determination, payable on such date or dates as may be determined pursuant to any Certificate of Determination. Except as otherwise provided in any Certificate of Determination, interest on the Series 2018 Notes shall be computed on the basis of twelve 30-day months and a 360-day year.

**SECTION 2.05. Denominations, Numbers and Letters.** Unless otherwise provided in any Certificate of Determination, the Series 2018 Notes shall be issuable in fully registered form in the denomination of \$5,000 or any integral multiple thereof. The Series 2018 Notes shall be numbered and lettered as provided in any Certificate of Determination.

**SECTION 2.06. Places of Payment and Paying Agents.** Except as otherwise provided in any Certificate of Determination, the principal and Redemption Price of the Series 2018 Notes shall be payable to the registered owner of each Series 2018 Note when due upon presentation of such Series 2018 Note at the principal corporate trust office of the Trustee. Except as otherwise provided in any Certificate of Determination, interest on the registered Series 2018 Notes will be paid by check or draft mailed on the interest payment date by Paying Agent to the registered owner at his address as it appears on the registration records or, at the option of any Holder of at least one million dollars (\$1,000,000) in principal amount of the Series 2018 Notes, by wire transfer in immediately available funds on each interest payment date to such Holder thereof upon written notice from such Holder to the Trustee, at such address as the Trustee may from time to time notify such Holder, containing the wire transfer address (which shall be in the continental United States) to which such Holder wishes to have such wire directed, if such written notice is received not less than twenty (20) days prior to the related interest payment date (such notice may refer to multiple interest payments).

**SECTION 2.07. Sources of Payment**

1. The principal of and interest on the Series 2018 Notes may be payable solely from (i) the proceeds of any other Series 2018 Notes, (ii) the proceeds of the Series 2018 Bonds, and (iii) the proceeds of notes or other evidences of indebtedness or any other amounts (which other amounts are not pledged under the Resolution), in each case if and to the extent such amounts may lawfully be used to make such payments. The interest on the Series 2018 Notes may also be payable from amounts available for transfer pursuant to Section 504(b) and Section 505.3 of the Resolution for the payment of Subordinated Indebtedness.

2. There are hereby pledged to the payment of principal and interest on the Series 2018 Notes (i) the proceeds of other Series 2018 Notes issued to refinance such Series 2018 Notes, and (ii) the proceeds of the Series 2018 Bonds issued to refinance such Series 2018 Notes, and such pledge has priority over any other pledge thereof created by the Resolution, including Section 501. There is hereby also pledged to the payment of interest on the Series 2018 Notes amounts available for transfer pursuant to Section 504(b) and Section 505.3 of the Resolution for the payment of Subordinated Indebtedness in accordance with and subject to the limitations contained in Section 506 of the Resolution. Proceeds and amounts described in clause (iii) of Section 2.07(1) hereof may be pledged to the payment of principal and interest on the Series 2018 Notes to the extent set forth in a Certificate of Determination.

#### **SECTION 2.08. Delegation to an Authorized Officer.**

1. There is hereby delegated to each Authorized Officer, subject to the limitations contained in this Supplemental Resolution, the following powers with respect to the Series 2018 Notes:

(a) to determine whether and when to issue any Series 2018 Notes, the amount of the Series 2018 Notes to be applied to pay Capital Costs or other uses as provided in Section 2.02 of this Supplemental Resolution and the amount of the proceeds of the Series 2018 Notes estimated to be necessary to pay the Costs of Issuance of the Series 2018 Notes;

(b) to determine the purposes or purposes for which the Series 2018 Notes are being issued, which shall be one or more of the purposes set forth in Section 2.02 of this Supplemental Resolution;

(c) to determine the principal amount of the Series 2018 Notes to be issued, which principal amount shall not exceed the amount described in Section 2.01 of this Supplemental Resolution, and whether such Series 2018 Notes shall be issued in one or more Series or subseries;

(d) to determine the maturity date and principal amount of each maturity of the Series 2018 Notes; provided that the Series 2018 Notes shall mature no later than five years after the date of issuance of such Series 2018 Notes;

(e) to determine the date or dates which the Series 2018 Notes shall be dated and the interest rate or rates of the Series 2018 Notes, provided that the true interest cost (as calculated by the officers of the Issuer executing any Certificate of Determination, which calculation shall be conclusive) on the Series 2018 Notes bearing a fixed rate of interest shall not exceed 4.00% per annum and for Series 2018 notes bearing interest at a variable interest rate shall not exceed a rate equal to SIFMA or one-month or three-month LIBOR or any short-term index generally accepted in the marketplace, in each case, plus 4.00% and any default rate or equivalent rate shall not exceed the sum of 4.00% plus either a specified prime rate or the federal funds rate;

(f) to determine the Redemption Price or Redemption Prices, if any, and the redemption terms, if any, for the Series 2018 Notes; provided, however, that if the Series 2018 Notes are to be redeemable at the election of the Issuer, the Redemption Price



(except in the case of taxable Series 2018 Notes) shall not be greater than one hundred three percent (103%) of the principal amount of the Series 2018 Notes to be redeemed, plus accrued interest thereon up to but not including the date of redemption and in the case of taxable Series 2018 Notes the Redemption Price may be determined pursuant to provisions relating to pro rata redemption and/or make-whole redemption;

(g) to determine the advisability of conducting the sale of all or any portion of the Series 2018 Notes through competitive bidding or through a negotiated sale or a direct purchase transaction, and to determine the purchase price for the Series 2018 Notes to be paid by the purchasers pursuant to either a competitive bid process or by the purchasers referred to in the Purchase Agreement described in Section 2.09 of this Supplemental Resolution in the event the Series 2018 Notes are sold, in such officer's discretion, through a negotiated sale or a direct purchase transaction, which may include such original premium and original issue discount as shall be determined in any Certificate of Determination, provided, however, that in the case of a negotiated transaction, underwriters' discount reflected in such purchase price shall not exceed \$3.50 for each one thousand dollars (\$1,000) principal amount of the Series 2018 Notes;

(h) to determine the advisability, as compared to an unenhanced transaction, of obtaining municipal bond insurance or any other credit or liquidity facility, to determine and accept the terms and provisions and price thereof, to determine the items to be pledged to the Series 2018 Notes from those permitted by Section A-203 of the Resolution, and to determine such other matters as the officer executing any Certificate of Determination shall consider necessary or appropriate and to effect such determinations by making any changes in or additions to this Supplemental Resolution required by bond insurers or the provider of any other credit or liquidity facility, if any, or required by the bond rating agencies in order to attain or maintain specific ratings on the Series 2018 Notes, or relating to the mechanism for the payment of insurance premium, credit or liquidity facility fees or direct purchase fees, notices, the provision of information, and such other matters of a technical, mechanical, procedural or descriptive nature necessary or appropriate to implement an insurance policy or any other credit or liquidity facility with respect to the Series 2018 Notes, and to make any changes in connection therewith. Such changes may include, but are not limited to, the making of any additional covenants with Holders or other parties deemed necessary or appropriate by the officer executing any Certificate of Determination;

(i) to take all actions required for the Series 2018 Notes to be eligible under the rules and regulations of The Depository Trust Company ("DTC") for investment and trading as uncertificated securities, to execute and deliver a standard form letter of representation with, or other form of document required by, DTC and, notwithstanding any provisions to the contrary contained in this Supplemental Resolution, to include in any Certificate of Determination such terms and provisions as may be appropriate or necessary to provide for uncertificated securities in lieu of Notes issuable in fully registered form; and

(j) to determine whether to issue all or any part of the Series 2018 Notes as Tax-Exempt Obligations or Taxable Obligations;

(k) to make such changes in or from the form of this Supplemental Resolution as may be required by a Rating Agency in order to attain or maintain specific ratings on the Series 2018 Notes;

(l) to make such changes in or from the form of this Supplemental Resolution as may be necessary or desirable in order to cure any ambiguities, inconsistencies or other defects; and

(m) to determine any other matters provided for herein, including the matters set forth in Sections 2.11 and 2.12 hereof.

2. Any Authorized Officer shall execute one or more Certificates of Determination evidencing the determinations made pursuant to this Supplemental Resolution and any such Certificate of Determination shall be conclusive evidence of the determinations of such Authorized Officer, as stated therein. More than one Certificate of Determination may be delivered to the extent more than one Series or subseries of Series 2018 Notes are delivered from time to time, or other authority is exercised under this Supplemental Resolution from time to time and each such Certificate of Determination shall be delivered to the Trustee prior to the authentication and delivery of the respective Series or subseries of Series 2018 Notes by the Trustee or other documentation. Determinations set forth in any Certificate of Determination shall have the same effect as if set forth in this Supplemental Resolution. Any such Authorized Officer may exercise any authority delegated under this Supplemental Resolution from time to time following issuance of any Series 2018 Notes, as appropriate for any purposes, including, if any Series 2018 Notes shall consist of multiple subseries, to change the principal amounts and number of the individual subseries or to combine all subseries into a single Series, if any Series 2018 Notes consist of a single Series, to divide such Series into two or more subseries and to determine the principal amount of such subseries, obtain a substitute or additional Credit Facility, or to appoint new or additional agents or other parties deemed appropriate to a particular form or mode of Obligation or manner of sale.

**SECTION 2.09. Sale of Series 2018 Notes.** Each Authorized Officer is hereby authorized either (i) to sell and award all or any portion of the Series 2018 Notes through a competitive bidding process to purchasers meeting the requirements of one or more Notices of Sale (as hereinafter defined) to be published in order to give notice of the competitive sale of the Series 2018 Notes; (ii) to sell and award all or any portion of the Series 2018 Notes through a negotiated sale to the purchasers who are referred to in the note purchase agreement and who shall be selected from the then current list of approved underwriters; (iii) to sell and award all or any portion of the Series 2018 Notes through a direct sale to the financial institution or institutions selected by the Authorized Officer who shall be referred to in the continuing covenant, direct purchase or similar agreement; or (iv) to issue all or any portion of the Series 2018 Notes in the form of a Loan Facility to any financial institution or institutions selected by the Authorized Officer. Each Authorized Officer is hereby authorized to sell and award the Series 2018 Notes to the purchasers referred to in the preceding sentence in the case of a note purchase agreement, in substantially the form most recently executed or delivered by the Issuer in connection with the sale of Obligations, or, with respect to a Loan Facility or a continuing covenant, direct purchase or similar agreement, containing bank facility terms and provisions (including, without limitation, increased costs, term-out, events of default and remedies) in substantially the form set forth in a letter of credit reimbursement agreement most recently

executed or delivered by the Issuer, including, if applicable, that the requirement that the Loan Facility issuer or direct purchaser offer to the Issuer a term-out provision of no less than five years, with such revisions to reflect the terms and provisions of the Series 2018 Notes as may be approved by the officer executing the note purchase, Loan Facility, continuing covenant or similar agreement (each, a "Purchase Agreement"). Each Authorized Officer is hereby authorized to agree to the selection of the representative of the underwriters or the other purchasers or facility providers as referred to in the Purchase Agreement or Agreements and to execute and deliver the Purchase Agreement or Agreements for and on behalf and in the name of the Issuer with such changes, omissions, insertions and revisions as may be approved by the officer executing the Purchase Agreement or Agreements, said execution being conclusive evidence of such approval and concurrence in the selection of the representative of the underwriters.

If it is determined that any sale of Series 2018 Notes shall be conducted on a competitive bid basis, each Authorized Officer is hereby further authorized to conduct the sale and award of the Series 2018 Notes on the basis of a competitive bid, pursuant to the terms of a notice of sale, including bid form (the "Notice of Sale"), in a form, including any limitations on permitted bidders and a description of the basis for determining the winning bidder or bidders, determined by such Authorized Officer. Each Authorized Officer is hereby authorized to conduct such competitive sale of the Series 2018 Notes in a manner consistent with this Supplemental Resolution and to utilize the services of the Authority's financial advisor and the services of an electronic bidding service, as such Authorized Officer shall determine, and the execution by such Authorized Officer of a letter of award shall be conclusive evidence of such award.

Each Authorized Officer is hereby authorized, to the extent required, to make public and to authorize the use and distribution by said purchasers of a Preliminary Official Statement (the "Preliminary Official Statement"), in connection with the public offering of the Series 2018 Notes, in substantially the form most recently executed or delivered by the Issuer in connection with the sale of Obligations of the Issuer, with such changes, omissions, insertions and revisions as such Authorized Officer shall deem advisable, said distribution being conclusive evidence of the approval of such changes, omissions, insertions and revisions. The Issuer authorizes any of said officers to deliver a certification to the effect that the Preliminary Official Statement, together with such other documents, if any, described in such certificate, was deemed final as of its date for purposes of Rule 15c2-12 of the Securities and Exchange Commission.

Each Authorized Officer is hereby authorized, to the extent required, to make public and to authorize distribution of a final Official Statement in substantially the form of the Preliminary Official Statement or the most recently executed and delivered Official Statement if there is not a Preliminary Official Statement, with such changes, omissions, insertions and revisions as such Authorized Officer shall deem advisable, to sign such Official Statement and to deliver such Official Statement to the purchasers of the Series 2018 Notes, said execution being conclusive evidence of the approval of such changes, omissions, insertions and revisions.

Notwithstanding the preceding two paragraphs, however, each Authorized Officer may make public and authorize the use and distribution of a final Official Statement in connection with the public offering of the Series 2018 Notes meeting the requirements of the preceding two paragraphs and may deem such Official Statement final as of its date for purposes of Rule 15c2-12 of the Securities and Exchange Commission.

Each Authorized Officer is hereby authorized to execute and deliver for and on behalf and in the name of the Issuer, to the extent determined by such Authorized Officer to be necessary or convenient, a Continuing Disclosure Agreement, substantially in the form of the Continuing Disclosure Agreement most recently executed and delivered by the Issuer in connection with the sale of Obligations, or such other form authorized by the Issuer in connection with other financings prior to the issuance of the Series 2018 Notes, with such changes, omissions, insertions and revisions as such Authorized Officer shall deem advisable (the “Continuing Disclosure Agreement”), said execution being conclusive evidence of the approval of such changes, omissions, insertions and revisions.

Each Authorized Officer (including any Assistant Secretary of the Issuer) is hereby authorized and directed to execute and deliver any and all documents and instruments and to do and cause to be done any and all acts necessary or proper for carrying out the Notice of Sale, the Purchase Agreement, the Continuing Disclosure Agreement, the terms of any municipal bond insurance or any other credit or liquidity facility, and the issuance, sale and delivery of the Series 2018 Notes, and for implementing the terms of the Series 2018 Notes and the transactions contemplated hereby or thereby.

When reference is made in this Supplemental Resolution to the authorization of an Authorized Officer to do any act, such act may be accomplished by any of such officers individually.

**SECTION 2.10. Forms of Series 2018 Notes and Authentication Certificate.** The form of registered Series 2018 Notes, and the certificate of authentication, shall be of substantially the form and tenor provided in any Certificate of Determination.

**SECTION 2.11. Appointment of Trustee, Paying Agent and other Agents.** There is hereby delegated to any Authorized Officer executing any Certificate of Determination the right and authority to appoint any trustee, paying agent, fiscal agent or other agent with respect to the Series 2018 Notes deemed advisable by such Authorized Officer and to determine the terms and provisions of any arrangements with any such parties.

**SECTION 2.12. General Provisions.** As and to the extent provided in any Certificate of Determination, the provisions of Articles A-III, IV, A-IV, A-VII, A-IX and A-XI of the Resolution may apply equally to the Series 2018 Notes as though set forth in full herein but with each reference to Bonds being a reference to Series 2018 Notes, except as affected by the terms hereof and the procedures of the Securities Depository; provided that the Authorized Officer executing any Certificate of Determination may, in the alternative, set forth in any Certificate of Determination provisions relating to any such matters as deemed necessary or appropriate by such Authorized Officer.

### **ARTICLE III**

#### **DISPOSITION AND ALLOCATION OF SERIES 2018 NOTE PROCEEDS**

**SECTION 3.01. Disposition of Series 2018 Note Proceeds.** Except as otherwise provided in any Certificate of Determination, the proceeds of the sale of the Series 2018 Notes shall be deposited in the Series 2018 Note Proceeds Account which is hereby established in the

Proceeds Fund and applied pursuant to the related Certificate of Determination to the payment of Capital Costs, including any Costs of Issuance and accrued interest, and the payment of principal and interest on Outstanding Series 2018 Notes.

#### **ARTICLE IV TAX COVENANT PROVISIONS AND DEFEASANCE**

**SECTION 4.01. Tax Covenants Relating to the Series 2018 Notes.** The Issuer covenants that, in order to maintain the exclusion from gross income for Federal income tax purposes of the interest on the Series 2018 Notes issued as Tax-Exempt Obligations, the Issuer will satisfy, or take such actions as are necessary to cause to be satisfied, each provision of the Code necessary to maintain such exclusion. In furtherance of this covenant, the Issuer agrees to comply with such written instructions as may be provided by Bond Counsel. In furtherance of the covenant contained in the preceding sentence, the Issuer agrees to continually comply with the provisions of any “Arbitrage and Use of Proceeds Certificate” or “Tax Certificate” to be executed by the Issuer in connection with the execution and delivery of any Series 2018 Notes issued as Tax-Exempt Obligations, as amended from time to time.

Notwithstanding any other provision of the Resolution to the contrary, upon the Issuer’s failure to observe, or refusal to comply with, the above covenant (a) the Holders of the Series 2018 Notes, or the Trustee acting on their behalf, shall be entitled to the rights and remedies provided to Bondholders or the Trustee under Section 702 of the Resolution (as though such provisions related to Series 2018 Notes rather than Bonds), and (b) neither the Holders of the Notes of any Series (other than the Series 2018 Notes or the Trustee acting on their behalf) nor the Trustee acting on their behalf, shall be entitled to exercise any right or remedy provided to Noteholders under the Resolution based upon the Issuer’s failure to observe, or refusal to comply with, the above covenant.

**SECTION 4.02. Defeasance.** In the event the Issuer shall seek, prior to the maturity or redemption date thereof, to pay or cause to be paid, within the meaning and with the effect expressed in this Supplemental Resolution, all or less than all Outstanding Series 2018 Notes issued as Tax-Exempt Obligations and the provisions of Section 4.01 hereof shall then be of any force or effect, then, notwithstanding the provisions of this Supplemental Resolution, the Series 2018 Notes issued as Tax-Exempt Obligations which the Issuer then seeks to pay or cause to be paid shall not be deemed to have been paid within the meaning and with the effect expressed in this Supplemental Resolution unless (i) the Issuer has confirmed in writing that the Holders of the Series 2018 Notes issued as Tax-Exempt Obligations which the Issuer then seeks to pay or cause to be paid will continue, after such action, to have the benefit of a covenant to the effect of the covenant of the Issuer contained in Section 4.01 hereof or (ii) there shall have been delivered to the Trustee an opinion of Bond Counsel to the effect that non-compliance thereafter with the applicable provisions of the Code will not affect the then current treatment of interest on the Series 2018 Notes issued as Tax-Exempt Obligations in determining gross income for Federal income tax purposes.

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**TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY**

**MULTIPLE SERIES 2018  
GENERAL REVENUE BOND  
SUPPLEMENTAL RESOLUTION**

**Adopted December 13, 2017**

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## Table of Contents

	Page
ARTICLE I DEFINITIONS AND STATUTORY AUTHORITY .....	1
Section 1.01        Supplemental Resolution .....	1
Section 1.02        Definitions .....	1
Section 1.03        Authority for this Supplemental Resolution .....	1
ARTICLE II AUTHORIZATION OF SERIES 2018 BONDS .....	2
Section 2.01        Authorized Principal Amount, Designation and Series .....	2
Section 2.02        Purposes .....	2
Section 2.03        Dates, Maturities, Principal Amounts and Interest .....	2
Section 2.04        Interest Payments .....	3
Section 2.05        Denominations, Numbers and Letters .....	3
Section 2.06        Places of Payment and Paying Agent .....	3
Section 2.07        Sinking Fund Installments .....	3
Section 2.08        Redemption Prices and Terms .....	3
Section 2.09        Delegation to an Authorized Officer .....	4
Section 2.10        Sale of Series 2018 Bonds .....	6
Section 2.11        Forms of Series 2018 Bonds and Trustee's Authentication Certificate .....	8
Section 2.12        Appointment of Trustee and Paying Agent .....	8
ARTICLE III DISPOSITION OF SERIES 2018 BOND PROCEEDS .....	8
Section 3.01        Disposition of Series 2018 Bond Proceeds .....	8
ARTICLE IV TAX COVENANTS AND DEFEASANCE .....	9
Section 4.01        Tax Covenants Relating to the Series 2018 Bonds .....	9
Section 4.02        Defeasance .....	9

**MULTIPLE SERIES 2018  
GENERAL REVENUE BOND  
SUPPLEMENTAL RESOLUTION**

BE IT RESOLVED by the Triborough Bridge and Tunnel Authority (the “Issuer”), as follows:

**ARTICLE I**

**DEFINITIONS AND STATUTORY AUTHORITY**

**Section 1.01 Supplemental Resolution.** This resolution is supplemental to, and is adopted, in accordance with Article II and Article A-VIII of a resolution of the Issuer adopted on March 26, 2002, entitled “General Resolution Authorizing General Revenue Obligations” (the “Resolution”).

**Section 1.02 Definitions.**

1. All capitalized terms which are used but not otherwise defined in this Multiple Series 2018 General Revenue Bond Supplemental Resolution (the “Supplemental Resolution”) shall have the same meanings, respectively, as such terms are given by Section 102 of the Resolution.

2. In this Supplemental Resolution:

“Authorized Officer” shall include the officers designated as such in the Resolution, and the Chairman, the Managing Director, the Chair of the Finance Committee, the Vice Chairman, the Chief Financial Officer or the Director, Finance, as well as any officer duly designated as “Acting” in said officer’s capacity, except that, for the purposes of any delegation set forth herein that does not expressly include any Assistant Secretary, “Authorized Officer” shall not include any Assistant Secretary of the Issuer.

“Board” shall mean, when used with respect to the Issuer, the board of the Issuer acting as such pursuant to the provisions of the Issuer Act, and when used with respect to the MTA, the members of the MTA acting as such pursuant to the provisions of the MTA Act.

“Bond Counsel” shall mean Nixon Peabody LLP, Orrick, Herrington & Sutcliffe LLP, D. Seaton and Associates, P.A., P.C., Bryant Rabbino LLP or any other attorney or firm of attorneys of nationally recognized standing in the field of law relating to the issuance of obligations by state and municipal entities, selected by the Issuer.

“Code” shall mean the Internal Revenue Code of 1986, as amended, and regulations thereunder.

**Section 1.03 Authority for this Supplemental Resolution.** This Supplemental Resolution is adopted pursuant to the provisions of the Issuer Act and the Resolution.



## ARTICLE II

### AUTHORIZATION OF SERIES 2018 BONDS

**Section 2.01 Authorized Principal Amount, Designation and Series.** Pursuant to the provisions of the Resolution and in order to finance Capital Costs, multiple Series of General Revenue Obligations (which may be issued at one time or from time to time in any number of Series or subseries, which for purposes of this Supplemental Resolution shall collectively be referred to herein as the “Series 2018 Bonds”, constituting Capital Cost Obligations, subject to redesignation as hereinafter provided) entitled to the benefit, protection and security of such provisions are hereby authorized to be issued in an aggregate principal amount not exceeding the principal amount necessary so that, after giving effect to any net original issue discount and underwriters’ discount from the principal amount, the amount to be deposited in the Proceeds Account pursuant to, or otherwise applied to effectuate the purposes of, Section 2.02 and Section 3.01 of this Supplemental Resolution (exclusive of the amount so deposited therein determined in the related Certificate of Determination as estimated to be necessary to pay capitalized interest or to pay any Costs of Issuance of the Series 2018 Bonds) shall not exceed the amount or amounts determined in one or more Certificates of Determination to be necessary to effectuate the purposes set forth in Section 2.02 hereof; provided, however, that the Series 2018 Bonds issued to finance Capital Costs shall not exceed \$200 million reduced by the amount of bonds then Outstanding issued under the Triborough Bridge and Tunnel Authority Multiple Series 2001 Subordinate Revenue Bond Supplemental Resolution, adopted December 13, 2017 (excluding all amounts excluded above, such as net original issue discount, underwriters’ discounts, capitalized interest and Costs of Issuance). For all purposes of this Section 2.01, net original issue premium as determined to be advisable by an Authorized Officer in connection with the marketing of the Series 2018 Bonds, shall not be counted.

Series 2018 Bonds shall be designated as, and shall be distinguished from the Obligations of all other Series by the title, “General Revenue Bonds, Series 2018”, or such other title or titles set forth in one or more Certificates of Determination.

The authority to issue Obligations and take related actions granted under previous resolutions of the Issuer shall continue in full force and effect. The authorization to issue the Series 2018 Bonds shall continue in effect until the adoption by the Issuer Board of a subsequent new money bond issuance supplemental resolution relating to 2019 new money financings.

**Section 2.02 Purposes.** The purposes for which the Series 2018 Bonds are issued shall be set forth in one or more Certificates of Determination and shall include the payment of all or any part of the Capital Costs, all to the extent and in the manner provided in this Supplemental Resolution.

**Section 2.03 Dates, Maturities, Principal Amounts and Interest.** The Series 2018 Bonds, except as otherwise provided in the Resolution, shall be dated the date or dates determined in the related Certificate of Determination. The Series 2018 Bonds shall mature on the date or dates and in the year or years and principal amount or amounts, and shall bear interest at the rate or rates per annum, if any, specified in or determined in the manner provided in the related Certificate of Determination.

**Section 2.04 Interest Payments.** The Series 2018 Bonds shall bear interest from their date or dates and be payable on such date or dates as may be determined pursuant to the related Certificate of Determination. Except as otherwise provided in the related Certificate of Determination, interest on the Series 2018 Bonds shall be computed on the basis of twelve (12) 30-day months and a 360-day year.

**Section 2.05 Denominations, Numbers and Letters.** Unless otherwise provided in the related Certificate of Determination, the Series 2018 Bonds shall be issued in fully registered form without coupons in the denomination of \$5,000 or any integral multiple thereof.

The Series 2018 Bonds shall be lettered and numbered as provided in the related Certificate of Determination.

**Section 2.06 Places of Payment and Paying Agent.** Except as otherwise provided in the related Certificate of Determination, principal and Redemption Price of the Series 2018 Bonds shall be payable to the registered owner of each Series 2018 Bond when due upon presentation of such Series 2018 Bond at the principal corporate trust office of the Trustee. Except as otherwise provided in the related Certificate of Determination, interest on the registered Series 2018 Bonds will be paid by check or draft mailed on the interest payment date by the Paying Agent, to the registered owner at his address as it appears on the registration books or, at the option of any Owner of at least one million dollars (\$1,000,000) in principal amount of the Series 2018 Bonds, by wire transfer in immediately available funds on each interest payment date to such Owner thereof upon written notice from such Owner to the Trustee, at such address as the Trustee may from time to time notify such Owner, containing the wire transfer address (which shall be in the continental United States) to which such Owner wishes to have such wire directed, if such written notice is received not less than twenty (20) days prior to the related interest payment date (such notice may refer to multiple interest payments).

**Section 2.07 Sinking Fund Installments.** The Series 2018 Bonds, if any, determined in the related Certificate of Determination shall be subject to redemption in part, by lot, or otherwise as determined in accordance with Section A-404 of the Resolution, on each date in the year or years determined in the related Certificate of Determination at the principal amount thereof plus accrued interest up to but not including the date of redemption thereof, from mandatory Sinking Fund Installments which are required to be made in amounts sufficient to redeem on each such date the principal amount of such Series 2018 Bonds.

**Section 2.08 Redemption Prices and Terms.** The Series 2018 Bonds may also be subject to redemption prior to maturity, at the option of the Issuer, upon notice as provided in Article A-IV of the Resolution, at any time as a whole or in part (and by lot within a maturity, or otherwise as determined in accordance with Section A-404 of the Resolution, if less than all of a maturity is to be redeemed), from maturities designated by the Issuer on and after the date and in the years and at the Redemption Prices (expressed as a percentage of principal amount) determined in the related Certificate of Determination, plus accrued interest up to but not including the redemption date. Notwithstanding the foregoing, in the case of taxable Series 2018 Bonds, if set forth in the Certificate of Determination, the taxable Series 2018 Bonds may be made subject to pro rata redemption and/or a make-whole redemption premium.

**Section 2.09 Delegation to an Authorized Officer.** 1. There is hereby delegated to each Authorized Officer, subject to the limitations contained in this Supplemental Resolution, the following powers with respect to the Series 2018 Bonds:

(a) to determine whether and when to issue any Series 2018 Bonds constituting Capital Cost Obligations, the amount of the Series 2018 Bonds to be applied to finance Capital Costs, and the amount of the proceeds of the Series 2018 Bonds, estimated to be necessary to pay the Costs of Issuance of the Series 2018 Bonds and capitalized interest, if any;

(b) to determine the purpose or purposes for which the Series 2018 Bonds are being issued, which shall be one or more of the purposes set forth in Section 2.02 of this Supplemental Resolution;

(c) to determine the principal amounts of the Series 2018 Bonds to be issued for the purposes set forth in Section 2.02 of this Supplemental Resolution and whether such principal amounts constitute a separate Series or a subseries of Series 2018 Bonds, which principal amounts (and the aggregate of all such Series and subseries) shall not exceed the principal amounts permitted by Section 2.01 of this Supplemental Resolution, and to determine Accreted Values and Appreciated Values, if applicable;

(d) to determine the maturity date and principal amount of each maturity of the Series 2018 Bonds and the amount and due date of each Sinking Fund Installment, if any;

(e) to determine the date or dates which the Series 2018 Bonds shall be dated and the interest rate or rates of the Series 2018 Bonds or the manner of determining such interest rate or rates; provided, however, that any Series 2018 Bonds issued as fixed rate Tax-Exempt Obligations shall be subject to a maximum interest rate of not greater than 10% per annum, any Series 2018 Bonds issued as fixed rate Taxable Obligations shall be subject to a maximum interest rate of not greater than 12% per annum, any Variable Interest Rate Obligations issued as Tax-Exempt Obligations shall be subject to a maximum interest rate of not greater than 15% per annum, any Variable Interest Rate Obligations issued as Taxable Obligations shall be subject to a maximum interest rate of not greater than 18% per annum and any Parity Reimbursement Obligations shall be subject to a maximum interest rate of not greater than 25% per annum, or, in each such case, such higher rate or rates as determined by the Issuer's Board;

(f) to determine the Redemption Price or Redemption Prices, if any and the redemption terms, if any, for the Series 2018 Bonds; provided, however, that if the Series 2018 Bonds are to be redeemable at the election of the Issuer, the Redemption Price (except in the case of taxable Series 2018 Bonds) shall not be greater than one hundred three percent (103%) of the principal amount of the Series 2018 Bonds to be redeemed, plus accrued interest thereon up to but not including the date of redemption and in the case of taxable Series 2018 Bonds the Redemption Price may be determined pursuant to provisions relating to pro rata redemption and/or make-whole redemption;

(g) to determine whether the sale of the Series 2018 Bonds shall be conducted on either a negotiated or competitive bid basis and, as applicable, to determine the purchase price for the Series 2018 Bonds to be paid by the purchaser or purchasers referred to in one or more

Purchase Agreements or a bank direct purchase agreement or the purchase price for the Series 2018 Bonds to be paid by the winning bidder, if such sale is conducted by competitive bid pursuant to a Notice of Sale (as hereinafter defined), in either case as such document is described in Section 2.10 of this Supplemental Resolution, which may include such original issue discount and original issue premium as shall be determined in the related Certificate of Determination; provided, however, that the underwriters' discount reflected in such purchase price shall not exceed \$10.00 for each one thousand dollars (\$1,000) principal amount of the Series 2018 Bonds;

(h) to take all actions required for the Series 2018 Bonds to be eligible under the rules and regulations of The Depository Trust Company ("DTC") for investment and trading as uncertificated securities, to execute and deliver a standard form of letter of representation with DTC and, notwithstanding any provisions to the contrary contained in this Supplemental Resolution, to include in the related Certificate of Determination such terms and provisions as may be appropriate or necessary to provide for uncertificated securities in lieu of Series 2018 Bonds issuable in fully registered form;

(i) to determine whether to issue all or any portion of the Series 2018 Bonds as Tax-Exempt Obligations, Taxable Obligations, Put Obligations, Variable Interest Rate Obligations or as any other form of Obligations permitted by the Resolution and any matters related thereto, including (i) the terms and provisions of any such Series 2018 Bonds, (ii) the selection of remarketing agents, tender agents, calculation agents, auction agents, dealers, bidding, agents or any other agents or parties to ancillary arrangements and the terms of any such arrangements, and (iii) the methods for determining the accrual of Debt Service;

(j) to determine the advisability, as compared to an unenhanced transaction, of obtaining one or more Credit Facilities, to select a provider or providers thereof and to determine and accept the terms and provisions and price thereof, to determine such other matters related thereto as in the opinion of the officer executing the related Certificate of Determination shall be considered necessary or appropriate and to effect such determinations by making any changes in or additions to this Supplemental Resolution required by Credit Facility providers, if any, or required by a Rating Agency in order to attain or maintain specific ratings on the Series 2018 Bonds, or relating to the mechanisms for the repayment of amounts advanced thereunder or payment of fees, premiums, expenses or any other amounts, notices, the provision of information, and such other matters of a technical, mechanical, procedural or descriptive nature necessary or appropriate to obtain or implement a Credit Facility with respect to the Series 2018 Bonds, and to make any changes in connection therewith;

(k) to make such changes in or from the form of this Supplemental Resolution as may be required by a Rating Agency in order to attain or maintain specific ratings on the Series 2018 Bonds;

(l) to make such changes in or from the form of this Supplemental Resolution as may be necessary or desirable in order to cure any ambiguities, inconsistencies or other defects; and

(m) to determine such other matters specified in or permitted by (i) Sections 202, 203, and A-201 of the Resolution or (ii) this Supplemental Resolution, including preparation of any documentation therefor.

2. Any Authorized Officer shall execute one or more Certificates of Determination evidencing the determinations made pursuant to this Supplemental Resolution and any such Certificate of Determination shall be conclusive evidence of the determinations of such Authorized Officer, as stated therein. More than one Certificate of Determination may be delivered to the extent more than one Series or subseries of Series 2018 Bonds are delivered from time to time, or other authority is exercised under this Supplemental Resolution from time to time and each such Certificate of Determination shall be delivered to the Trustee prior to the authentication and delivery of the respective Series or subseries of Series 2018 Bonds by the Trustee or other documentation. Determinations set forth in the related Certificate of Determination shall have the same effect as if set forth in this Supplemental Resolution. Any such Authorized Officer may exercise any authority delegated under this Supplemental Resolution from time to time following issuance of any Series 2018 Bonds, as appropriate for any purposes, including, in order to change interest rate modes or auction periods, obtain a substitute or additional Credit Facility, enter into a bank direct purchase agreement or similar instrument, or to appoint new or additional agents or other parties deemed appropriate to a particular form or mode of Obligation or manner of sale.

**Section 2.10 Sale of Series 2018 Bonds.** Each Authorized Officer is hereby authorized either (i) to sell and award all or any portion of the Series 2018 Bonds through a competitive bidding process to purchasers meeting the requirements of one or more Notices of Sale (as hereinafter defined) to be published in order to give notice of the competitive sale of the Series 2018 Bonds; (ii) to sell and award all or any portion of the Series 2018 Bonds through a negotiated sale to the purchasers who are referred to in the bond purchase agreement and who shall be selected from the then current list of approved underwriters; or (iii) to sell and award all or any portion of the Series 2018 Bonds through a direct sale to the financial institution or institutions selected by the Authorized Officer who shall be referred to in the continuing covenant, direct purchase or similar agreement. Each Authorized Officer is hereby authorized to sell and award the Series 2018 Bonds to the purchasers referred to in the preceding sentence in the case of a bond purchase agreement, in substantially the form most recently executed or delivered by the Issuer in connection with the sale of Obligations, or, with respect to a continuing covenant, direct purchase or similar agreement, containing bank facility terms and provisions (including, without limitation, increased costs, term-out, events of default and remedies) in substantially the form set forth in a letter of credit reimbursement agreement most recently executed or delivered by the Issuer, including, if applicable, that the direct purchaser offer to the Issuer a term-out provision of no less than five years, with such revisions to reflect the terms and provisions of the Series 2018 Bonds as may be approved by the officer executing the bond purchase, continuing covenant or similar agreement (each, a "Purchase Agreement"). Each Authorized Officer is hereby authorized to agree to the selection of the representative of the underwriters or the other purchasers or facility providers as referred to in the Purchase Agreement or Agreements and to execute and deliver the Purchase Agreement or Agreements for and on behalf and in the name of the Issuer with such changes, omissions, insertions and revisions as may be approved by the officer executing the Purchase Agreement or Agreements,

said execution being conclusive evidence of such approval and concurrence in the selection of the representative of the underwriters.

If it is determined that any sale of Series 2018 Bonds shall be conducted on a competitive bid basis each Authorized Officer is hereby further authorized to conduct the sale and award of the Series 2018 Bonds on the basis of a competitive bid, pursuant to the terms of a notice of sale, including bid form (the “Notice of Sale”), in a form, including any limitations on permitted bidders and a description of the basis for determining the winning bidder or bidders, determined by such Authorized Officer. Each Authorized Officer is hereby authorized to conduct such competitive sale of the Series 2018 Bonds in a manner consistent with this Supplemental Resolution and to utilize the services of the Authority’s financial advisor and the services of an electronic bidding service, as such Authorized Officer shall determine, and the execution by such Authorized Officer of a letter of award shall be conclusive evidence of such award.

Each Authorized Officer is hereby authorized to make public and to authorize the use and distribution by said purchasers or other appropriate parties of a preliminary official statement, offering circular, or other disclosure document (the “Preliminary Official Statement”) in connection with each public offering or any direct or private placement of the Series 2018 Bonds, in substantially the form most recently executed or delivered by the Issuer in connection with the sale of Obligations, with such changes, omissions, insertions and revisions as such officer shall deem advisable. The Issuer authorizes any of said officers to deliver a certification to the effect that such Preliminary Official Statement or Official Statement, if deemed necessary or appropriate, together with such other documents, if any, described in such certificate, was deemed final as of its date for purposes of Rule 15c2-12 of the Securities and Exchange Commission as applicable.

Each Authorized Officer is hereby authorized to make public and to authorize distribution of a final Official Statement in substantially the form of each Preliminary Official Statement or the most recently executed and delivered Official Statement if there is not a Preliminary Official Statement, with such changes, omissions, insertions and revisions as such officer shall deem advisable, to sign such Official Statement and to deliver such Official Statement to the purchasers of such issue of the Series 2018 Bonds, such execution being conclusive evidence of the approval of such changes, omissions, insertions and revisions.

Each Authorized Officer is hereby authorized to execute and deliver for and on behalf and in the name of the Issuer, to the extent determined by such Authorized Officer to be necessary or convenient, a Continuing Disclosure Agreement, substantially in the form appended to the Purchase Agreement or Notice of Sale, with such changes, omissions, insertions and revisions as such officer shall deem advisable (the “Continuing Disclosure Agreement”), said execution being conclusive evidence of the approval of such changes, omissions, insertions and revisions.

The proceeds of each good faith check, if any, received by the Issuer from the purchasers of each issue of the Series 2018 Bonds under the terms of the related Purchase Agreement or Notice of Sale may be invested by the Issuer pending application of the proceeds of such good faith check for the purposes provided in Section 2.02 of this Supplemental Resolution at the time of the issuance and delivery of such Series 2018 Bonds.

Each Authorized Officer (including any Assistant Secretary of the Issuer) is hereby authorized and directed to execute, deliver, amend, replace or terminate any and all documents and instruments (including any remarketing agreements, dealer agreements, broker-dealer agreements, tender agent agreements, or auction agency agreements, any investment agreements or arrangements, or any reimbursement agreements or documents or instruments relating to a Credit Facility deemed appropriate to a given form or mode of an Obligation) and to do and cause to be done any and all acts necessary or proper for carrying out each Purchase Agreement or Notice of Sale, each Continuing Disclosure Agreement, the terms of any Credit Facility or other such agreement or arrangement, and the issuance, sale and delivery of each issue of the Series 2018 Bonds and for implementing the terms of each issue of the Series 2018 Bonds and the transactions contemplated hereby or thereby.

When reference is made in this Supplemental Resolution to the authorization of an Authorized Officer to do any act, such act may be accomplished by any of such officers individually.

**Section 2.11 Forms of Series 2018 Bonds and Trustee's Authentication Certificate.** Subject to the provisions of the Resolution, the form of registered Series 2018 Bonds, and the Trustee's certificate of authentication, shall be substantially in the form set forth in Exhibit One to the Resolution including, if necessary, any changes to comply with the requirements of DTC or the provisions of this Supplemental Resolution or the related Certificate of Determination.

**Section 2.12 Appointment of Trustee and Paying Agent.** Unless otherwise provided in the related Certificate of Determination, U.S. Bank Trust National Association shall be the Trustee under the Resolution and the Paying Agent for the Series 2018 Bonds.

### ARTICLE III

#### DISPOSITION OF SERIES 2018 BOND PROCEEDS

**Section 3.01 Disposition of Series 2018 Bond Proceeds.** Any proceeds of the sale of the Series 2018 Bonds, other than accrued interest and capitalized interest, if any, shall be deposited, simultaneously with the issuance and delivery of the Series 2018 Bonds, at one time or from time to time in one or more Series or subseries, in the Proceeds Account which is deemed to be established for each Series in the Proceeds Fund to be applied, or shall otherwise be applied pursuant to a Certificate of Determination to:

- (a) the payment of all or any part of the Capital Costs; and
- (b) the balance of such proceeds, exclusive of accrued interest, shall be deposited in the COI Account and applied to the payment of Costs of Issuance or otherwise applied to the payment of Costs of Issuance.

Unless otherwise provided in the related Certificate of Determination, accrued interest and capitalized interest, if any, received on the sale of the Series 2018 Bonds shall be deposited in the Debt Service Fund.

## ARTICLE IV

### TAX COVENANTS AND DEFEASANCE

**Section 4.01 Tax Covenants Relating to the Series 2018 Bonds.** The Issuer covenants that, in order to maintain the exclusion from gross income for Federal income tax purposes of the interest on the Series 2018 Bonds issued as Tax-Exempt Obligations, the Issuer will satisfy, or take such actions as are necessary to cause to be satisfied, each provision of the Code necessary to maintain such exclusion. In furtherance of this covenant, the Issuer agrees to comply with such written instructions as may be provided by Bond Counsel. In furtherance of the covenant contained in the preceding sentence, the Issuer agrees to continually comply with the provisions of any “Arbitrage and Use of Proceeds Certificate” or “Tax Certificate” to be executed by the Issuer in connection with the execution and delivery of any Series 2018 Bonds issued as Tax-Exempt Obligations, as amended from time to time.

Notwithstanding any other provision of the Resolution to the contrary, upon the Issuer’s failure to observe, or refusal to comply with the above covenant (a) the Owners of the Series 2018 Bonds, or the Trustee acting on their behalf, shall be entitled to the rights and remedies provided to Owners or the Trustee under Section 702 of the Resolution, other than the right (which is hereby abrogated solely as to the Issuer’s failure to observe, or refusal to comply with the above covenant) to declare the principal of all Obligations then Outstanding, and the interest accrued thereon, to be due and payable pursuant to Section 567 of the Issuer Act, and (b) neither the Owners of the Obligations of any Series or holders of any Parity Debt (other than the Series 2018 Bonds or the Trustee acting on their behalf), nor the Trustee acting on their behalf, shall be entitled to exercise any right or remedy provided to the Owners, the Parity Debt holders or the Trustee under the Resolution based upon the Issuer’s failure to observe, or refusal to comply with, the above covenant.

**Section 4.02 Defeasance.** In the event the Issuer shall seek, prior to the maturity or redemption date thereof, to pay or cause to be paid, within the meaning and with the effect expressed in the Resolution, all or less than all Outstanding Series 2018 Bonds issued as Tax-Exempt Obligations and the provisions of Section 4.01 hereof shall then be of any force or effect, then, notwithstanding the provisions of Article A-XI of the Resolution, the Series 2018 Bonds issued as Tax-Exempt Obligations which the Issuer then seeks to pay or cause to be paid shall not be deemed to have been paid within the meaning and with the effect expressed in Section A-1101 of the Resolution unless (i) the Issuer has confirmed in writing that the Owners of the Series 2018 Bonds issued as Tax-Exempt Obligations which the Issuer then seeks to pay or cause to be paid will continue, after such action, to have the benefit of a covenant to the effect of the covenant of the Issuer contained in Section 4.01 hereof or (ii) there shall have been delivered to the Trustee an Opinion of Bond Counsel to the effect that non-compliance thereafter with the applicable provisions of the Code will not affect the then current treatment of interest on the Series 2018 Bonds issued as Tax-Exempt Obligations in determining gross income for Federal income tax purposes.



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**TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY**

**MULTIPLE SERIES 2001  
SUBORDINATE REVENUE BOND  
SUPPLEMENTAL RESOLUTION**

**Adopted December 13, 2017**

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## Table of Contents

	Page
ARTICLE I DEFINITIONS AND STATUTORY AUTHORITY.....	1
Section 1.01 Supplemental Resolution .....	1
Section 1.02 Definitions.....	1
Section 1.03 Authority for this Supplemental Resolution .....	1
ARTICLE II AUTHORIZATION OF SERIES 2018 BONDS .....	2
Section 2.01 Authorized Principal Amount, Designation and Series .....	2
Section 2.02 Purposes .....	2
Section 2.03 Dates, Maturities, Principal Amounts and Interest .....	2
Section 2.04 Interest Payments .....	3
Section 2.05 Denominations, Numbers and Letters.....	3
Section 2.06 Places of Payment and Paying Agent .....	3
Section 2.07 Sinking Fund Installments .....	3
Section 2.08 Redemption Prices and Terms .....	3
Section 2.09 Delegation to an Authorized Officer.....	4
Section 2.10 Sale of Series 2018 Bonds .....	6
Section 2.11 Forms of Series 2018 Bonds and Trustee's Authentication Certificate.....	8
Section 2.12 Appointment of Trustee and Paying Agent .....	8
ARTICLE III DISPOSITION OF SERIES 2018 BOND PROCEEDS.....	8
Section 3.01 Disposition of Series 2018 Bond Proceeds.....	8
ARTICLE IV TAX COVENANTS AND DEFEASANCE .....	8
Section 4.01 Tax Covenants Relating to the Series 2018 Bonds.....	8
Section 4.02 Additional Covenants.....	9
Section 4.03 Defeasance .....	10

**MULTIPLE SERIES 2001  
SUBORDINATE REVENUE BOND  
SUPPLEMENTAL RESOLUTION**

BE IT RESOLVED by the Triborough Bridge and Tunnel Authority (the “Issuer”), as follows:

**ARTICLE I**

**DEFINITIONS AND STATUTORY AUTHORITY**

**Section 1.01 Supplemental Resolution.** This resolution is supplemental to, and is adopted, in accordance with Article II and Article A-VIII of a resolution of the Issuer adopted on March 26, 2002, entitled “2001 Subordinate Revenue Resolution Authorizing Subordinate Revenue Obligations” (the “Resolution”).

**Section 1.02 Definitions.**

1. All capitalized terms which are used but not otherwise defined in this Multiple Series 2001 Subordinate Revenue Bond Supplemental Resolution (the “Supplemental Resolution”) shall have the same meanings, respectively, as such terms are given by Section 102 of the Resolution.

2. In this Supplemental Resolution:

“Authorized Officer” shall include the officers designated as such in the Resolution, and the Chairman, the Managing Director, the Chair of the Finance Committee, the Vice Chairman, the Chief Financial Officer or the Director, Finance, as well as any officer duly designated as “Acting” in said officer’s capacity, except that, for the purposes of any delegation set forth herein that does not expressly include any Assistant Secretary, “Authorized Officer” shall not include any Assistant Secretary of the Issuer.

“Board” shall mean, when used with respect to the Issuer, the board of the Issuer acting as such pursuant to the provisions of the Issuer Act, and when used with respect to the MTA, the members of the MTA acting as such pursuant to the provisions of the MTA Act.

“Bond Counsel” shall mean Nixon Peabody LLP, Orrick, Herrington & Sutcliffe LLP, D. Seaton and Associates, P.A., P.C., Bryant Rabbino LLP or any other attorney or firm of attorneys of nationally recognized standing in the field of law relating to the issuance of obligations by state and municipal entities, selected by the Issuer.

“Code” shall mean the Internal Revenue Code of 1986, as amended, and regulations thereunder.

**Section 1.03 Authority for this Supplemental Resolution.** This Supplemental Resolution is adopted pursuant to the provisions of the Issuer Act and the Resolution.

## ARTICLE II

### AUTHORIZATION OF SERIES 2018 BONDS

**Section 2.01 Authorized Principal Amount, Designation and Series.** Pursuant to the provisions of the Resolution and in order to finance Capital Costs, multiple Series of Subordinate Revenue Obligations (which may be issued at one time or from time to time in any number of Series or subseries, which for purposes of this Supplemental Resolution shall collectively be referred to herein as the “Series 2018 Bonds”, constituting Capital Cost Subordinate Revenue Obligations, subject to redesignation as hereinafter provided) entitled to the benefit, protection and security of such provisions are hereby authorized to be issued in an aggregate principal amount not exceeding the principal amount necessary so that, after giving effect to any net original issue discount and underwriters’ discount from the principal amount, the amount to be deposited in the Proceeds Account pursuant to, or otherwise applied to effectuate the purposes of, Section 2.02 and Section 3.01 of this Supplemental Resolution (exclusive of the amount so deposited therein determined in the related Certificate of Determination as estimated to be necessary to pay capitalized interest or to pay any Costs of Issuance of the Series 2018 Bonds) shall not exceed the amount or amounts determined in one or more Certificates of Determination to be necessary to effectuate the purposes set forth in Section 2.02 hereof; provided, however, that the Series 2018 Bonds issued to finance Capital Costs shall not exceed \$200 million, reduced by the amount of bonds then Outstanding issued under the Triborough Bridge and Tunnel Authority Multiple Series 2018 General Revenue Bond Supplemental Resolution, adopted December 13, 2017 (excluding all amounts excluded above, such as net original issue discount, underwriters’ discounts, capitalized interest and Costs of Issuance). For all purposes of this Section 2.01, net original issue premium as determined to be advisable by an Authorized Officer in connection with the marketing of the Series 2018 Bonds, shall not be counted.

Series 2018 Bonds shall be designated as, and shall be distinguished from the Obligations of all other Series by the title “Subordinate Revenue Bonds, Series 2018”, or such other title or titles set forth in one or more Certificates of Determination.

The authority to issue Obligations and take related actions granted under previous resolutions of the Issuer shall continue in full force and effect. The authorization to issue the Series 2018 Bonds shall continue in effect until the adoption by the Issuer Board of a subsequent new money bond issuance supplemental resolution relating to 2019 new money financings.

**Section 2.02 Purposes.** The purposes for which the Series 2018 Bonds are issued shall be set forth in one or more Certificates of Determination and shall include the payment of all or any part of the Capital Costs, all to the extent and in the manner provided in this Supplemental Resolution.

**Section 2.03 Dates, Maturities, Principal Amounts and Interest.** The Series 2018 Bonds, except as otherwise provided in the Resolution, shall be dated the date or dates determined in the related Certificate of Determination. The Series 2018 Bonds shall mature on the date or dates and in the year or years and principal amount or amounts, and shall bear interest at the rate or rates per annum, if any, specified in or determined in the manner provided in the related Certificate of Determination.

**Section 2.04 Interest Payments.** The Series 2018 Bonds shall bear interest from their date or dates and be payable on such date or dates as may be determined pursuant to the related Certificate of Determination. Except as otherwise provided in the related Certificate of Determination, interest on the Series 2018 Bonds shall be computed on the basis of twelve (12) 30-day months and a 360-day year.

**Section 2.05 Denominations, Numbers and Letters.** Unless otherwise provided in the related Certificate of Determination, the Series 2018 Bonds shall be issued in fully registered form without coupons in the denomination of \$5,000 or any integral multiple thereof.

The Series 2018 Bonds shall be lettered and numbered as provided in the related Certificate of Determination.

**Section 2.06 Places of Payment and Paying Agent.** Except as otherwise provided in the related Certificate of Determination, principal and Redemption Price of the Series 2018 Bonds shall be payable to the registered owner of each Series 2018 Bond when due upon presentation of such Series 2018 Bond at the principal corporate trust office of the Trustee. Except as otherwise provided in the related Certificate of Determination, interest on the registered Series 2018 Bonds will be paid by check or draft mailed on the interest payment date by the Paying Agent, to the registered owner at his address as it appears on the registration books or, at the option of any Owner of at least one million dollars (\$1,000,000) in principal amount of the Series 2018 Bonds, by wire transfer in immediately available funds on each interest payment date to such Owner thereof upon written notice from such Owner to the Trustee, at such address as the Trustee may from time to time notify such Owner, containing the wire transfer address (which shall be in the continental United States) to which such Owner wishes to have such wire directed, if such written notice is received not less than twenty (20) days prior to the related interest payment date (such notice may refer to multiple interest payments).

**Section 2.07 Sinking Fund Installments.** The Series 2018 Bonds, if any, determined in the related Certificate of Determination shall be subject to redemption in part, by lot, or otherwise as determined in accordance with Section A-404 of the Resolution, on each date in the year or years determined in the related Certificate of Determination at the principal amount thereof plus accrued interest up to but not including the date of redemption thereof, from mandatory Sinking Fund Installments which are required to be made in amounts sufficient to redeem on each such date the principal amount of such Series 2018 Bonds.

**Section 2.08 Redemption Prices and Terms.** The Series 2018 Bonds may also be subject to redemption prior to maturity, at the option of the Issuer, upon notice as provided in Article A-IV of the Resolution, at any time as a whole or in part (and by lot within a maturity, or otherwise as determined in accordance with Section A-404 of the Resolution, if less than all of a maturity is to be redeemed), from maturities designated by the Issuer on and after the date and in the years and at the Redemption Prices (expressed as a percentage of principal amount) determined in the related Certificate of Determination, plus accrued interest up to but not including the redemption date. Notwithstanding the foregoing, in the case of taxable Series 2018 Bonds, if set forth in the Certificate of Determination, the taxable Series 2018 Bonds may be made subject to pro rata redemption and/or a make-whole redemption premium.

**Section 2.09 Delegation to an Authorized Officer.** 1. There is hereby delegated to each Authorized Officer, subject to the limitations contained in this Supplemental Resolution, the following powers with respect to the Series 2018 Bonds:

(a) to determine whether and when to issue any Series 2018 Bonds constituting Capital Cost Subordinate Revenue Obligations, the amount of the Series 2018 Bonds to be applied to finance Capital Costs, and the amount of the proceeds of the Series 2018 Bonds, estimated to be necessary to pay the Costs of Issuance of the Series 2018 Bonds and capitalized interest, if any;

(b) to determine the purpose or purposes for which the Series 2018 Bonds are being issued, which shall be one or more of the purposes set forth in Section 2.02 of this Supplemental Resolution;

(c) to determine the principal amounts of the Series 2018 Bonds to be issued for the purposes set forth in Section 2.02 of this Supplemental Resolution and whether such principal amounts constitute a separate Series or a subseries of Series 2018 Bonds, which principal amounts (and the aggregate of all such Series and subseries) shall not exceed the principal amounts permitted by Section 2.01 of this Supplemental Resolution, and to determine Accreted Values and Appreciated Values, if applicable;

(d) to determine the maturity date and principal amount of each maturity of the Series 2018 Bonds and the amount and due date of each Sinking Fund Installment, if any;

(e) to determine the date or dates which the Series 2018 Bonds shall be dated and the interest rate or rates of the Series 2018 Bonds or the manner of determining such interest rate or rates; provided, however, that any Series 2018 Bonds issued as fixed rate Tax-Exempt Obligations shall be subject to a maximum interest rate of not greater than 10% per annum, any Series 2018 Bonds issued as fixed rate Taxable Obligations shall be subject to a maximum interest rate of not greater than 12% per annum, any Variable Interest Rate Obligations issued as Tax-Exempt Obligations shall be subject to a maximum interest rate of not greater than 15% per annum, any Variable Interest Rate Obligations issued as Taxable Obligations shall be subject to a maximum interest rate of not greater than 18% per annum and any Parity Reimbursement Obligations shall be subject to a maximum interest rate of not greater than 25% per annum, or, in each such case, such higher rate or rates as determined by the Issuer's Board;

(f) to determine the Redemption Price or Redemption Prices, if any, and the redemption terms, if any, for the Series 2018 Bonds; provided, however, that if the Series 2018 Bonds are to be redeemable at the election of the Issuer, the Redemption Price (except in the case of taxable Series 2018 Bonds) shall not be greater than one hundred three percent (103%) of the principal amount of the Series 2018 Bonds to be redeemed, plus accrued interest thereon up to but not including the date of redemption and in the case of taxable Series 2018 Bonds the Redemption Price may be determined pursuant to provisions relating to pro rata redemption and/or make-whole redemption;

(g) to determine whether the sale of the Series 2018 Bonds shall be conducted on either a negotiated or competitive bid basis and, as applicable, to determine the purchase price for the Series 2018 Bonds to be paid by the purchaser or purchasers referred to in one or more

Purchase Agreements or a bank direct purchase agreement or the purchase price for the Series 2018 Bonds to be paid by the winning bidder, if such sale is conducted by competitive bid pursuant to a Notice of Sale (as hereinafter defined), in either case as such document is described in Section 2.10 of this Supplemental Resolution, which may include such original issue discount and original issue premium as shall be determined in the related Certificate of Determination; provided, however, that the underwriters' discount reflected in such purchase price shall not exceed \$10.00 for each one thousand dollars (\$1,000) principal amount of the Series 2018 Bonds;

(h) to take all actions required for the Series 2018 Bonds to be eligible under the rules and regulations of The Depository Trust Company ("DTC") for investment and trading as uncertificated securities, to execute and deliver a standard form of letter of representation with DTC and, notwithstanding any provisions to the contrary contained in this Supplemental Resolution, to include in the related Certificate of Determination such terms and provisions as may be appropriate or necessary to provide for uncertificated securities in lieu of Series 2018 Bonds issuable in fully registered form;

(i) to determine whether to issue all or any portion of the Series 2018 Bonds as Tax-Exempt Obligations, Taxable Obligations, Put Obligations, Variable Interest Rate Obligations or as any other form of Obligations permitted by the Resolution and any matters related thereto, including (i) the terms and provisions of any such Series 2018 Bonds, (ii) the selection of remarketing agents, tender agents, calculation agents, auction agents, dealers, bidding, agents or any other agents or parties to ancillary arrangements and the terms of any such arrangements, and (iii) the methods for determining the accrual of Debt Service;

(j) to determine the advisability, as compared to an unenhanced transaction, of obtaining one or more Credit Facilities, to select a provider or providers thereof and to determine and accept the terms and provisions and price thereof, to determine such other matters related thereto as in the opinion of the officer executing the related Certificate of Determination shall be considered necessary or appropriate and to effect such determinations by making any changes in or additions to this Supplemental Resolution required by Credit Facility providers, if any, or required by a Rating Agency in order to attain or maintain specific ratings on the Series 2018 Bonds, or relating to the mechanisms for the repayment of amounts advanced thereunder or payment of fees, premiums, expenses or any other amounts, notices, the provision of information, and such other matters of a technical, mechanical, procedural or descriptive nature necessary or appropriate to obtain or implement a Credit Facility with respect to the Series 2018 Bonds, and to make any changes in connection therewith;

(k) to make such changes in or from the form of this Supplemental Resolution as may be required by a Rating Agency in order to attain or maintain specific ratings on the Series 2018 Bonds; and

(l) to make such changes in or from the form of this Supplemental Resolution as may be necessary or desirable in order to cure any ambiguities, inconsistencies or other defects; and

(m) to determine such other matters specified in or permitted by (i) Sections 202, 203, and A-201 of the Resolution or (ii) this Supplemental Resolution, including preparation of any documentation therefor.

2. Any Authorized Officer shall execute one or more Certificates of Determination evidencing the determinations made pursuant to this Supplemental Resolution and any such Certificate of Determination shall be conclusive evidence of the determinations of such Authorized Officer, as stated therein. More than one Certificate of Determination may be delivered to the extent more than one Series or subseries of Series 2018 Bonds are delivered from time to time, or other authority is exercised under this Supplemental Resolution from time to time and each such Certificate of Determination shall be delivered to the Trustee prior to the authentication and delivery of the respective Series or subseries of Series 2018 Bonds by the Trustee or other documentation. Determinations set forth in the related Certificate of Determination shall have the same effect as if set forth in this Supplemental Resolution. Any such Authorized Officer may exercise any authority delegated under this Supplemental Resolution from time to time following issuance of any Series 2018 Bonds, as appropriate for any purposes, including, in order to change interest rate modes or auction periods, obtain a substitute or additional Credit Facility, enter into a bank direct purchase agreement or similar instrument, or to appoint new or additional agents or other parties deemed appropriate to a particular form or mode of Obligation or manner of sale.

**Section 2.10 Sale of Series 2018 Bonds.** Each Authorized Officer is hereby authorized either (i) to sell and award all or any portion of the Series 2018 Bonds through a competitive bidding process to purchasers meeting the requirements of one or more Notices of Sale (as hereinafter defined) to be published in order to give notice of the competitive sale of the Series 2018 Bonds; (ii) to sell and award all or any portion of the Series 2018 Bonds through a negotiated sale to the purchasers who are referred to in the bond purchase agreement and who shall be selected from the then current list of approved underwriters; or (iii) to sell and award all or any portion of the Series 2018 Bonds through a direct sale to the financial institution or institutions selected by the Authorized Officer who shall be referred to in the continuing covenant, direct purchase or similar agreement. Each Authorized Officer is hereby authorized to sell and award the Series 2018 Bonds to the purchasers referred to in the preceding sentence in the case of a bond purchase agreement, in substantially the form most recently executed or delivered by the Issuer in connection with the sale of Obligations, or, with respect to a continuing covenant, direct purchase or similar agreement, containing bank facility terms and provisions (including, without limitation, increased costs, term-out, events of default and remedies) in substantially the form set forth in a letter of credit reimbursement agreement most recently executed or delivered by the Issuer, including, if applicable, that the direct purchaser offer to the Issuer a term-out provision of no less than five years, with such revisions to reflect the terms and provisions of the Series 2018 Bonds as may be approved by the officer executing the bond purchase, continuing covenant or similar agreement (each, a "Purchase Agreement"). Each Authorized Officer is hereby authorized to agree to the selection of the representative of the underwriters or the other purchasers or facility providers as referred to in the Purchase Agreement or Agreements and to execute and deliver the Purchase Agreement or Agreements for and on behalf and in the name of the Issuer with such changes, omissions, insertions and revisions as may be approved by the officer executing the Purchase Agreement or Agreements, said execution being conclusive evidence of such approval and concurrence in the selection of the representative of the underwriters.

If it is determined that any sale of Series 2018 Bonds shall be conducted on a competitive bid basis each Authorized Officer is hereby further authorized to conduct the sale and award of the Series 2018 Bonds on the basis of a competitive bid, pursuant to the terms of a notice of sale,



including bid form (the “Notice of Sale”), in a form, including any limitations on permitted bidders and a description of the basis for determining the winning bidder or bidders, determined by such Authorized Officer. Each Authorized Officer is hereby authorized to conduct such competitive sale of the Series 2018 Bonds in a manner consistent with this Supplemental Resolution and to utilize the services of the Authority’s financial advisor and the services of an electronic bidding service, as such Authorized Officer shall determine, and the execution by such Authorized Officer of a letter of award shall be conclusive evidence of such award.

Each Authorized Officer is hereby authorized to make public and to authorize the use and distribution by said purchasers or other appropriate parties of a preliminary official statement, offering circular, or other disclosure document (the “Preliminary Official Statement”) in connection with each public offering or any direct or private placement of the Series 2018 Bonds, in substantially the form most recently executed or delivered by the Issuer in connection with the sale of Obligations, with such changes, omissions, insertions and revisions as such officer shall deem advisable. The Issuer authorizes any of said officers to deliver a certification to the effect that such Preliminary Official Statement or Official Statement, if deemed necessary or appropriate, together with such other documents, if any, described in such certificate, was deemed final as of its date for purposes of Rule 15c2-12 of the Securities and Exchange Commission as applicable.

Each Authorized Officer is hereby authorized to make public and to authorize distribution of a final Official Statement in substantially the form of each Preliminary Official Statement or the most recently executed and delivered Official Statement if there is not a Preliminary Official Statement, with such changes, omissions, insertions and revisions as such officer shall deem advisable, to sign such Official Statement and to deliver such Official Statement to the purchasers of such issue of the Series 2018 Bonds, such execution being conclusive evidence of the approval of such changes, omissions, insertions and revisions.

Each Authorized Officer is hereby authorized to execute and deliver for and on behalf and in the name of the Issuer, to the extent determined by such Authorized Officer to be necessary or convenient, a Continuing Disclosure Agreement, substantially in the form appended to the Purchase Agreement or Notice of Sale, with such changes, omissions, insertions and revisions as such officer shall deem advisable (the “Continuing Disclosure Agreement”), said execution being conclusive evidence of the approval of such changes, omissions, insertions and revisions.

The proceeds of each good faith check, if any, received by the Issuer from the purchasers of each issue of the Series 2018 Bonds under the terms of the related Purchase Agreement or Notice of Sale may be invested by the Issuer pending application of the proceeds of such good faith check for the purposes provided in Section 2.02 of this Supplemental Resolution at the time of the issuance and delivery of such Series 2018 Bonds.

Each Authorized Officer (including any Assistant Secretary of the Issuer) is hereby authorized and directed to execute, deliver, amend, replace or terminate any and all documents and instruments (including any remarketing agreements, dealer agreements, broker-dealer agreements, tender agent agreements, or auction agency agreements, any investment agreements or arrangements, or any reimbursement agreements or documents or instruments relating to a Credit Facility deemed appropriate to a given form or mode of an Obligation) and to do and

cause to be done any and all acts necessary or proper for carrying out each Purchase Agreement or Notice of Sale, each Continuing Disclosure Agreement, the terms of any Credit Facility or other such agreement or arrangement, and the issuance, sale and delivery of each issue of the Series 2018 Bonds and for implementing the terms of each issue of the Series 2018 Bonds and the transactions contemplated hereby or thereby.

When reference is made in this Supplemental Resolution to the authorization of an Authorized Officer to do any act, such act may be accomplished by any of such officers individually.

**Section 2.11 Forms of Series 2018 Bonds and Trustee's Authentication Certificate.** Subject to the provisions of the Resolution, the form of registered Series 2018 Bonds, and the Trustee's certificate of authentication, shall be substantially in the form set forth in Exhibit One to the Resolution including, if necessary, any changes to comply with the requirements of DTC or the provisions of this Supplemental Resolution or the related Certificate of Determination.

**Section 2.12 Appointment of Trustee and Paying Agent.** Unless otherwise provided in the related Certificate of Determination, The Bank of New York Mellon, as successor in interest to JPMorgan Chase Bank, N.A., shall be the Trustee under the Resolution and the Paying Agent for the Series 2018 Bonds.

### ARTICLE III

#### DISPOSITION OF SERIES 2018 BOND PROCEEDS

**Section 3.01 Disposition of Series 2018 Bond Proceeds.** Any proceeds of the sale of the Series 2018 Bonds, other than accrued interest and capitalized interest, if any, shall be deposited, simultaneously with the issuance and delivery of the Series 2018 Bonds, at one time or from time to time in one or more Series or subseries, in the Proceeds Account which is deemed to be established for each Series in the Proceeds Fund to be applied, or shall otherwise be applied pursuant to a Certificate of Determination to:

- (a) the payment of all or any part of the Capital Costs; and
- (b) the balance of such proceeds, exclusive of accrued interest, shall be deposited in the COI Account and applied to the payment of Costs of Issuance or otherwise applied to the payment of Costs of Issuance.

Unless otherwise provided in the related Certificate of Determination, accrued interest and capitalized interest, if any, received on the sale of the Series 2018 Bonds shall be deposited in the Debt Service Fund.

### ARTICLE IV

#### TAX COVENANTS AND DEFEASANCE

**Section 4.01 Tax Covenants Relating to the Series 2018 Bonds.** The Issuer covenants that, in order to maintain the exclusion from gross income for Federal income tax purposes of the interest on the Series 2018 Bonds issued as Tax-Exempt Obligations, the Issuer

will satisfy, or take such actions as are necessary to cause to be satisfied, each provision of the Code necessary to maintain such exclusion. In furtherance of this covenant, the Issuer agrees to comply with such written instructions as may be provided by Bond Counsel. In furtherance of the covenant contained in the preceding sentence, the Issuer agrees to continually comply with the provisions of any "Arbitrage and Use of Proceeds Certificate" or "Tax Certificate" to be executed by the Issuer in connection with the execution and delivery of any Series 2018 Bonds issued as Tax-Exempt Obligations, as amended from time to time.

Notwithstanding any other provision of the Resolution to the contrary, upon the Issuer's failure to observe, or refusal to comply with the above covenant (a) the Owners of the Series 2018 Bonds, or the Trustee acting on their behalf, shall be entitled to the rights and remedies provided to Owners or the Trustee under Section 702 of the Resolution, other than the right (which is hereby abrogated solely as to the Issuer's failure to observe, or refusal to comply with the above covenant) to declare the principal of all Obligations then Outstanding, and the interest accrued thereon, to be due and payable pursuant to Section 567 of the Issuer Act, and (b) neither the Owners of the Obligations of any Series or holders of any Parity Debt (other than the Series 2018 Bonds or the Trustee acting on their behalf), nor the Trustee acting on their behalf, shall be entitled to exercise any right or remedy provided to the Owners, the Parity Debt holders or the Trustee under the Resolution based upon the Issuer's failure to observe, or refusal to comply with, the above covenant.

#### **Section 4.02 Additional Covenants.**

1. The Issuer covenants and agrees that it will not issue any Senior Obligations under the Senior Resolution (other than pursuant to Section 205 thereof) unless in addition to satisfying the requirements of the Senior Resolution, an Authorized Officer delivers to the trustee under the Senior Resolution a certificate demonstrating that for any period of 12 consecutive calendar months out of the 18 complete calendar months next preceding the date of authentication and delivery such issue of Senior Obligations, Net Revenues are at least equal to 1.10 times the Combined Maximum Annual Calculated Debt Service for all Subordinate Revenue Obligations, Parity Debt, Senior Obligations and Senior Parity Debt.

2. The Issuer covenants and agrees that in addition to complying with the provisions of Section 604 of the Resolution, the Issuer shall at all times establish, levy, maintain and collect, or cause to be established, levied, maintained and collected, such tolls, rentals and other charges in connection with the TBTA Facilities as shall always be sufficient, together with other money available therefor (including the anticipated receipt of proceeds of sale of Obligations or other bonds, notes or other obligations or evidences of indebtedness of the Issuer that will be used to pay the principal of Obligations issued in anticipation of such receipt, but not including any anticipated or actual proceeds from the sale of TBTA Facilities), to equal or exceed in each calendar year the greater of (a) an amount equal to the sum of amounts necessary in such calendar year (i) to pay all Operating Expenses of the Issuer, plus (ii) to pay the sum of Calculated Debt Service as defined in the Resolution and Calculated Debt Service as defined in the Senior Resolution, plus (iii) to maintain any reserve established by the Issuer pursuant to the Senior Resolution, in such amount as may be determined from time to time by an Authorized Officer in his or her judgment, or (b) an amount such that Revenues less Operating Expenses shall equal at least 1.10 times the sum of Calculated Debt Service as defined in the Senior Resolution and Calculated Debt Service as defined in the Resolution for such calendar year.

**Section 4.03 Defeasance.** In the event the Issuer shall seek, prior to the maturity or redemption date thereof, to pay or cause to be paid, within the meaning and with the effect expressed in the Resolution, all or less than all Outstanding Series 2018 Bonds issued as Tax-Exempt Obligations and the provisions of Section 4.01 hereof shall then be of any force or effect, then, notwithstanding the provisions of Article A-XI of the Resolution, the Series 2018 Bonds issued as Tax-Exempt Obligations which the Issuer then seeks to pay or cause to be paid shall not be deemed to have been paid within the meaning and with the effect expressed in Section A-1101 of the Resolution unless (i) the Issuer has confirmed in writing that the Owners of the Series 2018 Bonds issued as Tax-Exempt Obligations which the Issuer then seeks to pay or cause to be paid will continue, after such action, to have the benefit of a covenant to the effect of the covenant of the Issuer contained in Section 4.01 hereof or (ii) there shall have been delivered to the Trustee an Opinion of Bond Counsel to the effect that non-compliance thereafter with the applicable provisions of the Code will not affect the then current treatment of interest on the Series 2018 Bonds issued as Tax-Exempt Obligations in determining gross income for Federal income tax purposes.

**TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY**

**MULTIPLE SERIES 2018 BOND ANTICIPATION NOTES AND RELATED  
SUBORDINATED INDEBTEDNESS  
GENERAL REVENUE BOND SUPPLEMENTAL RESOLUTION**

**Adopted December 13, 2017**

**MULTIPLE SERIES 2018 BOND ANTICIPATION NOTES AND  
RELATED SUBORDINATED INDEBTEDNESS  
GENERAL REVENUE BOND SUPPLEMENTAL RESOLUTION**

BE IT RESOLVED by the Board of Triborough Bridge and Tunnel Authority (the “Issuer”), as follows:

**ARTICLE I  
DEFINITIONS AND STATUTORY AUTHORITY**

**SECTION 1.01. Supplemental Resolution.** This resolution is supplemental to, and is adopted in accordance with Article II, Article A-II and Article A-VIII of, a resolution adopted by the Issuer on March 26, 2002, entitled “General Resolution Authorizing General Revenue Obligations”, as heretofore supplemented (the “Resolution”).

**SECTION 1.02. Definitions.**

1. All terms which are defined in Section 102 of the Resolution shall have the same meanings, respectively, in this Multiple Series 2018 Bond Anticipation Notes and Related Subordinated Indebtedness General Revenue Bond Supplemental Resolution (hereinafter referred to as the “Supplemental Resolution”) as such terms are given in said Section 102 of the Resolution.

2. In this Supplemental Resolution:

“Authorized Officer” shall include the officers designated as such in the Resolution, and the Chairman, the Managing Director, the Chair of the Finance Committee, the Vice Chairman, the Chief Financial Officer or the Director, Finance of the MTA, as well as any officer duly designated as “Acting” in said officer’s capacity, except that, for the purposes of any delegation set forth herein that does not expressly include any Assistant Secretary, “Authorized Officer” shall not include any Assistant Secretary of the Issuer.

“Board” shall mean, when used with respect to the Issuer, the board of the Issuer acting as such pursuant to the provisions of the Issuer Act, and when used with respect to the MTA, the members of the MTA acting as such pursuant to the provisions of the MTA Act.

“Bond Counsel” shall mean Nixon Peabody LLP, Orrick, Herrington & Sutcliffe LLP, D. Seaton and Associates, P.A., P.C., Bryant Rabbino LLP or any other attorney or firm of attorneys of nationally recognized standing in the field of law relating to the issuance of obligations by state and municipal entities, selected by the Issuer.

“Code” shall mean the Internal Revenue Code of 1986, as amended, and regulations thereunder.

“Noteholder”, “Holder” or “Holder of Notes”, or any similar term, means any person who shall be the registered owner of any Outstanding Series 2018 Note or Notes.

“Notice of Sale” shall mean the form of Notice of Sale to be distributed with the Preliminary Official Statement, hereinafter defined, and published in the event of a competitive sale of the Series 2018 Notes.

“Series 2018 Bonds” shall mean the General Revenue Bonds, Series 2018, authorized by Article II of the Resolution and pursuant to a resolution of the Issuer adopted as of the date that this resolution is adopted.

“Series 2018 Notes” shall mean the General Revenue Bond Anticipation Notes, Series 2018, authorized to be issued, in accordance with Section A-203 of the Standard Resolution Provisions, pursuant to this Supplemental Resolution.

**SECTION 1.03. Authority for this Supplemental Resolution.** This Supplemental Resolution is adopted pursuant to the provisions of the Issuer Act and the Resolution.

## **ARTICLE II AUTHORIZATION OF SERIES 2018 NOTES**

**SECTION 2.01. Principal Amount, Designation and Series.** In accordance with the provisions of the Resolution, one or more Series of General Revenue Bond Anticipation Notes constituting Obligation Anticipation Notes under the Resolution (which may be issued in one or more Series or subseries and from time to time, which for purposes of this Supplemental Resolution shall collectively be referred to herein as the “Series 2018 Notes”, subject to redesignation as hereinafter provided) and entitled to the benefit, protection and security of this Supplemental Resolution are hereby authorized to be issued in an aggregate principal amount not exceeding the principal amount necessary so that, after giving effect to any net original issue discount and underwriters’ discount from the principal amount, the amount to be deposited in the Series 2018 Note Proceeds Account pursuant to, or otherwise applied to effectuate the purposes of, Section 2.02 and Section 3.01 of this Supplemental Resolution (exclusive of the amount so deposited therein determined in any Certificate of Determination as estimated to be necessary to pay capitalized interest or to pay any Costs of Issuance of the Series 2018 Notes), shall not exceed \$200 million at any one time Outstanding reduced by the amount of bonds issued under (1) the Triborough Bridge and Tunnel Authority Multiple Series 2018 General Revenue Bond Supplemental Resolution, adopted December 13, 2017, and (2) the Triborough Bridge and Tunnel Authority Multiple Series 2001 Subordinate Revenue Bond Supplemental Resolution adopted December 13, 2017 (but, for purposes of clarification, not including both the Series 2018 Notes and Series 2018 Bonds issued thereunder to refinance Series 2018 Notes). The Series 2018 Notes may be issued in the form of a loan agreement, line of credit, revolving credit agreement or similar facility (each, a “Loan Facility”). For all purposes of this Section such General Revenue Bond Anticipation Notes shall be designated as, and shall be distinguished from the General Revenue Bond Anticipation Notes of all other Series by the title, “General Revenue Bond Anticipation Notes, Series 2018”, or with such further or different designations as may be provided in any Certificate of Determination.

The authority to issue Obligation Anticipation Notes and take related actions granted under previous resolutions of the Issuer shall continue in full force and effect. The authorization to issue the Series 2018 Notes shall continue in effect until the adoption by the Issuer’s Board of a subsequent new money note issuance supplemental resolution relating to 2019 new money

financings, provided, however, the authorization to issue the Series 2018 Bonds to refinance the Series 2018 Notes authorized hereunder shall continue in effect until all of such Series 2018 Notes have been refinanced by Series 2018 Bonds.

**SECTION 2.02. Use of Proceeds.** The proceeds of the Series 2018 Notes shall be used only for the purposes set forth in one or more Certificates of Determination and may include (i) the payment of all or any part of the Capital Costs, including Costs of Issuance related to the Series 2018 Notes and (ii) the payment of the principal and interest of Outstanding Series 2018 Notes.

**SECTION 2.03. Date, Maturity and Interest for Series 2018 Notes; Redemption.** The Series 2018 Notes shall be dated the date or dates determined in any Certificate of Determination. The Series 2018 Notes shall mature on the date or dates and in the principal amount or amounts, and shall bear interest at the rate or rates per annum, if any, determined in any Certificate of Determination. Except as otherwise provided in any Certificate of Determination, the Series 2018 Notes shall not be subject to redemption prior to maturity.

**SECTION 2.04. Interest Payments.** The Series 2018 Notes shall bear interest from the dates determined in any Certificate of Determination, payable on such date or dates as may be determined pursuant to any Certificate of Determination. Except as otherwise provided in any Certificate of Determination, interest on the Series 2018 Notes shall be computed on the basis of twelve (12) 30-day months and a 360-day year.

**SECTION 2.05. Denominations, Numbers and Letters.** Unless otherwise provided in any Certificate of Determination, the Series 2018 Notes shall be issuable in fully registered form in the denomination of \$5,000 or any integral multiple thereof. The Series 2018 Notes shall be numbered and lettered as provided in any Certificate of Determination.

**SECTION 2.06. Places of Payment and Paying Agents.** Except as otherwise provided in any Certificate of Determination, the principal and Redemption Price of the Series 2018 Notes shall be payable to the registered owner of each Series 2018 Note when due upon presentation of such Series 2018 Note at the principal corporate trust office of the Trustee. Except as otherwise provided in any Certificate of Determination, interest on the registered Series 2018 Notes will be paid by check or draft mailed on the interest payment date by Paying Agent to the registered owner at his address as it appears on the registration records or, at the option of any Holder of at least one million dollars (\$1,000,000) in principal amount of the Series 2018 Notes, by wire transfer in immediately available funds on each interest payment date to such Holder thereof upon written notice from such Holder to the Trustee, at such address as the Trustee may from time to time notify such Holder, containing the wire transfer address (which shall be in the continental United States) to which such Holder wishes to have such wire directed, if such written notice is received not less than twenty (20) days prior to the related interest payment date (such notice may refer to multiple interest payments).

**SECTION 2.07. Sources of Payment**

1. The principal of and interest on the Series 2018 Notes may be payable solely from (i) the proceeds of any other Series 2018 Notes, (ii) the proceeds of the Series 2018 Bonds, and (iii) the proceeds of notes or other evidences of indebtedness or any other amounts (which other



amounts are not pledged under the Resolution), in each case if and to the extent such amounts may lawfully be used to make such payments. The interest on the Series 2018 Notes may also be payable from amounts available for transfer pursuant to Section 503(c) of the Resolution for the payment of Subordinated Indebtedness.

2. There are hereby pledged to the payment of principal and interest on the Series 2018 Notes (i) the proceeds of other Series 2018 Notes issued to refinance such Series 2018 Notes, and (ii) the proceeds of the Series 2018 Bonds issued to refinance such Series 2018 Notes, and such pledge has priority over any other pledge thereof created by the Resolution, including Section 501. There is also hereby pledged to the payment of interest on the Series 2018 Notes amounts available for transfer pursuant to Section 503(c) of the Resolution for the payment of Subordinated Indebtedness in accordance with and subject to the limitations contained in Section 507 of the Resolution. Proceeds and amounts described in clause (iii) of Section 2.07(1) hereof may be pledged to the payment of principal and interest on the Series 2018 Notes to the extent set forth in a Certificate of Determination.

#### **SECTION 2.08. Delegation to an Authorized Officer.**

1. There is hereby delegated to each Authorized Officer, subject to the limitations contained in this Supplemental Resolution, the following powers with respect to the Series 2018 Notes:

(a) to determine whether and when to issue any Series 2018 Notes, the amount of the Series 2018 Notes to be applied to pay Capital Costs or other uses as provided in Section 2.02 of this Supplemental Resolution and the amount of the proceeds of the Series 2018 Notes estimated to be necessary to pay the Costs of Issuance of the Series 2018 Notes;

(b) to determine the purposes or purposes for which the Series 2018 Notes are being issued, which shall be one or more of the purposes set forth in Section 2.02 of this Supplemental Resolution;

(c) to determine the principal amount of the Series 2018 Notes to be issued, which principal amount shall not exceed the amount described in Section 2.01 of this Supplemental Resolution, and whether such Series 2018 Notes shall be issued in one or more Series or subseries;

(d) to determine the maturity date and principal amount of each maturity of the Series 2018 Notes; provided that the Series 2018 Notes shall mature no later than five years after the date of issuance of such Series 2018 Notes;

(e) to determine the date or dates which the Series 2018 Notes shall be dated and the interest rate or rates of the Series 2018 Notes, provided that the true interest cost (as calculated by the officers of the Issuer executing any Certificate of Determination, which calculation shall be conclusive) on the Series 2018 Notes bearing a fixed rate of interest shall not exceed 4.00% per annum and for Series 2018 notes bearing interest at a variable interest rate shall not exceed a rate equal to SIFMA or one-month or three-month LIBOR or any short-term index generally accepted in the marketplace, in each case,

plus 4.00% and any default rate or equivalent rate shall not exceed the sum of 4.00% plus either a specified prime rate or the federal funds rate;

(f) to determine the Redemption Price or Redemption Prices, if any, and the redemption terms, if any, for the Series 2018 Notes; provided, however, that if the Series 2018 Notes are to be redeemable at the election of the Issuer, the Redemption Price (except in the case of taxable Series 2018 Notes) shall not be greater than one hundred three percent (103%) of the principal amount of the Series 2018 Notes to be redeemed, plus accrued interest thereon up to but not including the date of redemption and in the case of taxable Series 2018 Notes the Redemption Price may be determined pursuant to provisions relating to pro rata redemption and/or make-whole redemption;

(g) to determine the advisability of conducting the sale of all or any portion of the Series 2018 Notes through competitive bidding or through a negotiated sale or a direct purchase transaction, and to determine the purchase price for the Series 2018 Notes to be paid by the purchasers pursuant to either a competitive bid process or by the purchasers referred to in the Purchase Agreement described in Section 2.09 of this Supplemental Resolution in the event the Series 2018 Notes are sold, in such officer's discretion, through a negotiated sale or a direct purchase transaction, which may include such original premium and original issue discount as shall be determined in any Certificate of Determination, provided, however, that in the case of a negotiated transaction, underwriters' discount reflected in such purchase price shall not exceed \$3.50 for each one thousand dollars (\$1,000) principal amount of the Series 2018 Notes;

(h) to determine the advisability, as compared to an unenhanced transaction, of obtaining municipal bond insurance or any other credit or liquidity facility, to determine and accept the terms and provisions and price thereof, to determine the items to be pledged to the Series 2018 Notes from those permitted by Section A-203 of the Resolution, and to determine such other matters as the officer executing any Certificate of Determination shall consider necessary or appropriate and to effect such determinations by making any changes in or additions to this Supplemental Resolution required by bond insurers or the provider of any other credit or liquidity facility, if any, or required by the bond rating agencies in order to attain or maintain specific ratings on the Series 2018 Notes, or relating to the mechanism for the payment of insurance premium, credit or liquidity facility fees or direct purchase fees, notices, the provision of information, and such other matters of a technical, mechanical, procedural or descriptive nature necessary or appropriate to implement an insurance policy or any other credit or liquidity facility with respect to the Series 2018 Notes, and to make any changes in connection therewith. Such changes may include, but are not limited to, the making of any additional covenants with Holders or other parties deemed necessary or appropriate by the officer executing any Certificate of Determination;

(i) to take all actions required for the Series 2018 Notes to be eligible under the rules and regulations of The Depository Trust Company ("DTC") for investment and trading as uncertificated securities, to execute and deliver a standard form letter of representation with, or other form of document required by, DTC and, notwithstanding any provisions to the contrary contained in this Supplemental Resolution, to include in any Certificate of Determination such terms and provisions as may be appropriate or

necessary to provide for uncertificated securities in lieu of Notes issuable in fully registered form; and

(j) to determine whether to issue all or any part of the Series 2018 Notes as Tax-Exempt Obligations or Taxable Obligations;

(k) to make such changes in or from the form of this Supplemental Resolution as may be required by a Rating Agency in order to attain or maintain specific ratings on the Series 2018 Notes;

(l) to make such changes in or from the form of this Supplemental Resolution as may be necessary or desirable in order to cure any ambiguities, inconsistencies or other defects; and

(m) to determine any other matters provided for herein, including the matters set forth in Sections 2.11 and 2.12 hereof.

2. Any Authorized Officer shall execute one or more Certificates of Determination evidencing the determinations made pursuant to this Supplemental Resolution and any such Certificate of Determination shall be conclusive evidence of the determinations of such Authorized Officer, as stated therein. More than one Certificate of Determination may be delivered to the extent more than one Series or subseries of Series 2018 Notes are delivered from time to time, or other authority is exercised under this Supplemental Resolution from time to time and each such Certificate of Determination shall be delivered to the Trustee prior to the authentication and delivery of the respective Series or subseries of Series 2018 Notes by the Trustee or other documentation. Determinations set forth in any Certificate of Determination shall have the same effect as if set forth in this Supplemental Resolution. Any such Authorized Officer may exercise any authority delegated under this Supplemental Resolution from time to time following issuance of any Series 2018 Notes, as appropriate for any purposes, including, if any Series 2018 Notes shall consist of multiple subseries, to change the principal amounts and number of the individual subseries or to combine all subseries into a single Series, if any Series 2018 Notes consist of a single Series, to divide such Series into two or more subseries and to determine the principal amount of such subseries, obtain a substitute or additional Credit Facility, or to appoint new or additional agents or other parties deemed appropriate to a particular form or mode of Obligation or manner of sale.

**SECTION 2.09. Sale of Series 2018 Notes.** Each Authorized Officer is hereby authorized either (i) to sell and award all or any portion of the Series 2018 Notes through a competitive bidding process to purchasers meeting the requirements of one or more Notices of Sale (as hereinafter defined) to be published in order to give notice of the competitive sale of the Series 2018 Notes; (ii) to sell and award all or any portion of the Series 2018 Notes through a negotiated sale to the purchasers who are referred to in the note purchase agreement and who shall be selected from the then current list of approved underwriters; (iii) to sell and award all or any portion of the Series 2018 Notes through a direct sale to the financial institution or institutions selected by the Authorized Officer who shall be referred to in the continuing covenant, direct purchase or similar agreement; or (iv) to issue all or any portion of the Series 2018 Notes in the form of a Loan Facility to any financial institution or institutions selected by the Authorized Officer. Each Authorized Officer is hereby authorized to sell and

award the Series 2018 Notes to the purchasers referred to in the preceding sentence in the case of a note purchase agreement, in substantially the form most recently executed or delivered by the Issuer in connection with the sale of Obligations, or, with respect to a Loan Facility or a continuing covenant, direct purchase or similar agreement, containing bank facility terms and provisions (including, without limitation, increased costs, term-out, events of default and remedies) in substantially the form set forth in a letter of credit reimbursement agreement most recently executed or delivered by the Issuer, including, if applicable, that the requirement that the Loan Facility issuer or direct purchaser offer to the Issuer a term-out provision of no less than five years, with such revisions to reflect the terms and provisions of the Series 2018 Notes as may be approved by the officer executing the note purchase, Loan Facility, continuing covenant or similar agreement (each, a "Purchase Agreement"). Each Authorized Officer is hereby authorized to agree to the selection of the representative of the underwriters or the other purchasers or facility providers as referred to in the Purchase Agreement or Agreements and to execute and deliver the Purchase Agreement or Agreements for and on behalf and in the name of the Issuer with such changes, omissions, insertions and revisions as may be approved by the officer executing the Purchase Agreement or Agreements, said execution being conclusive evidence of such approval and concurrence in the selection of the representative of the underwriters.

If it is determined that any sale of Series 2018 Notes shall be conducted on a competitive bid basis, each Authorized Officer is hereby further authorized to conduct the sale and award of the Series 2018 Notes on the basis of a competitive bid, pursuant to the terms of a notice of sale, including bid form (the "Notice of Sale"), in a form, including any limitations on permitted bidders and a description of the basis for determining the winning bidder or bidders, determined by such Authorized Officer. Each Authorized Officer is hereby authorized to conduct such competitive sale of the Series 2018 Notes in a manner consistent with this Supplemental Resolution and to utilize the services of the Authority's financial advisor and the services of an electronic bidding service, as such Authorized Officer shall determine, and the execution by such Authorized Officer of a letter of award shall be conclusive evidence of such award.

Each Authorized Officer is hereby authorized, to the extent required, to make public and to authorize the use and distribution by said purchasers of a Preliminary Official Statement (the "Preliminary Official Statement"), in connection with the public offering of the Series 2018 Notes, in substantially the form most recently executed or delivered by the Issuer in connection with the sale of Obligations of the Issuer, with such changes, omissions, insertions and revisions as such Authorized Officer shall deem advisable, said distribution being conclusive evidence of the approval of such changes, omissions, insertions and revisions. The Issuer authorizes any of said officers to deliver a certification to the effect that the Preliminary Official Statement, together with such other documents, if any, described in such certificate, was deemed final as of its date for purposes of Rule 15c2-12 of the Securities and Exchange Commission.

Each Authorized Officer is hereby authorized, to the extent required, to make public and to authorize distribution of a final Official Statement in substantially the form of the Preliminary Official Statement or the most recently executed and delivered Official Statement if there is not a Preliminary Official Statement, with such changes, omissions, insertions and revisions as such Authorized Officer shall deem advisable, to sign such Official Statement and to deliver such Official Statement to the purchasers of the Series 2018 Notes, said execution being conclusive evidence of the approval of such changes, omissions, insertions and revisions.

Notwithstanding the preceding two paragraphs, however, each Authorized Officer may make public and authorize the use and distribution of a final Official Statement in connection with the public offering of the Series 2018 Notes meeting the requirements of the preceding two paragraphs and may deem such Official Statement final as of its date for purposes of Rule 15c2-12 of the Securities and Exchange Commission.

Each Authorized Officer is hereby authorized to execute and deliver for and on behalf and in the name of the Issuer, to the extent determined by such Authorized Officer to be necessary or convenient, a Continuing Disclosure Agreement, substantially in the form of the Continuing Disclosure Agreement most recently executed and delivered by the Issuer in connection with the sale of Obligations, or such other form authorized by the Issuer in connection with other financings prior to the issuance of the Series 2018 Notes, with such changes, omissions, insertions and revisions as such Authorized Officer shall deem advisable (the "Continuing Disclosure Agreement"), said execution being conclusive evidence of the approval of such changes, omissions, insertions and revisions.

Each Authorized Officer (including any Assistant Secretary of the Issuer) is hereby authorized and directed to execute and deliver any and all documents and instruments and to do and cause to be done any and all acts necessary or proper for carrying out the Notice of Sale, the Purchase Agreement, the Continuing Disclosure Agreement, the terms of any municipal bond insurance or any other credit or liquidity facility, and the issuance, sale and delivery of the Series 2018 Notes, and for implementing the terms of the Series 2018 Notes and the transactions contemplated hereby or thereby.

When reference is made in this Supplemental Resolution to the authorization of an Authorized Officer to do any act, such act may be accomplished by any of such officers individually.

**SECTION 2.10. Forms of Series 2018 Notes and Authentication Certificate.** The form of registered Series 2018 Notes, and the certificate of authentication, shall be of substantially the form and tenor provided in any Certificate of Determination.

**SECTION 2.11. Appointment of Trustee, Paying Agent and other Agents.** There is hereby delegated to any Authorized Officer executing any Certificate of Determination the right and authority to appoint any trustee, paying agent, fiscal agent or other agent with respect to the Series 2018 Notes deemed advisable by such Authorized Officer and to determine the terms and provisions of any arrangements with any such parties.

**SECTION 2.12. General Provisions.** As and to the extent provided in any Certificate of Determination, the provisions of Articles A-III, IV, A-IV, A-VII, A-IX and A-XI of the Resolution may apply equally to the Series 2018 Notes as though set forth in full herein but with each reference to Bonds being a reference to Series 2018 Notes, except as affected by the terms hereof and the procedures of the Securities Depository; provided that the Authorized Officer executing any Certificate of Determination may, in the alternative, set forth in any Certificate of Determination provisions relating to any such matters as deemed necessary or appropriate by such Authorized Officer.

## ARTICLE III

### DISPOSITION AND ALLOCATION OF SERIES 2018 NOTE PROCEEDS

**SECTION 3.01. Disposition of Series 2018 Note Proceeds.** Except as otherwise provided in any Certificate of Determination, the proceeds of the sale of the Series 2018 Notes shall be deposited in the Series 2018 Note Proceeds Account which is hereby established in the Proceeds Fund and applied pursuant to the related Certificate of Determination to the payment of Capital Costs, including any Costs of Issuance and accrued interest, and the payment of principal and interest on Outstanding Series 2018 Notes.

## ARTICLE IV

### TAX COVENANT PROVISIONS AND DEFEASANCE

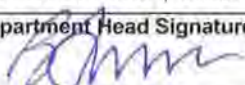

**SECTION 4.01. Tax Covenants Relating to the Series 2018 Notes.** The Issuer covenants that, in order to maintain the exclusion from gross income for Federal income tax purposes of the interest on the Series 2018 Notes issued as Tax-Exempt Obligations, the Issuer will satisfy, or take such actions as are necessary to cause to be satisfied, each provision of the Code necessary to maintain such exclusion. In furtherance of this covenant, the Issuer agrees to comply with such written instructions as may be provided by Bond Counsel. In furtherance of the covenant contained in the preceding sentence, the Issuer agrees to continually comply with the provisions of any "Arbitrage and Use of Proceeds Certificate" or "Tax Certificate" to be executed by the Issuer in connection with the execution and delivery of any Series 2018 Notes issued as Tax-Exempt Obligations, as amended from time to time.



Notwithstanding any other provision of the Resolution to the contrary, upon the Issuer's failure to observe, or refusal to comply with, the above covenant (a) the Holders of the Series 2018 Notes, or the Trustee acting on their behalf, shall be entitled to the rights and remedies provided to Bondholders under Section 702 of the Resolution (as though such provisions related to Series 2018 Notes rather than Bonds), other than the right (which is hereby abrogated solely as to the Issuer's failure to observe, or refusal to comply with, the above covenant) to declare the principal of all Notes then Outstanding, and the interest accrued thereon, to be due and payable pursuant to Section 567 of the Issuer Act, and (b) neither the Holders of the Notes of any Series (other than the Series 2018 Notes or the Trustee acting on their behalf) nor the Trustee acting on their behalf, shall be entitled to exercise any right or remedy provided to Noteholders under the Resolution based upon the Issuer's failure to observe, or refusal to comply with, the above covenant.

**SECTION 4.02. Defeasance.** In the event the Issuer shall seek, prior to the maturity or redemption date thereof, to pay or cause to be paid, within the meaning and with the effect expressed in this Supplemental Resolution, all or less than all Outstanding Series 2018 Notes issued as Tax-Exempt Obligations and the provisions of Section 4.01 hereof shall then be of any force or effect, then, notwithstanding the provisions of this Supplemental Resolution, the Series 2018 Notes issued as Tax-Exempt Obligations which the Issuer then seeks to pay or cause to be paid shall not be deemed to have been paid within the meaning and with the effect expressed in this Supplemental Resolution unless (i) the Issuer has confirmed in writing that the Holders of the Series 2018 Notes issued as Tax-Exempt Obligations which the Issuer then seeks to pay or cause to be paid will continue, after such action, to have the benefit of a covenant to the

effect of the covenant of the Issuer contained in Section 4.01 hereof or (ii) there shall have been delivered to the Trustee an opinion of Bond Counsel to the effect that non-compliance thereafter with the applicable provisions of the Code will not affect the then current treatment of interest on the Series 2018 Notes issued as Tax-Exempt Obligations in determining gross income for Federal income tax purposes.

# Staff Summary

<b>Subject</b> Authorization to Issue Transportation Revenue Refunding Bonds, Dedicated Tax Fund Refunding Bonds, Triborough Bridge and Tunnel Authority General Revenue Refunding Bonds and Subordinate Revenue Refunding Bonds	<b>Date</b> December 13, 2017
<b>Department</b> Finance	<b>Vendor Name</b> N/A
<b>Department Head Name</b> Robert E. Foran, Chief Financial Officer	<b>Contract Number</b>
<b>Department Head Signature</b> 	<b>Contract Manager Name</b>
<b>Project Manager Name</b> Patrick McCoy, Director of Finance 	<b>Table of Contents Ref #</b>

Board Action						Internal Approvals			
Order	To	Date	Approval	Info	Other	Order	Approval	Order	Approval
1	Finance Comm.	12/11	X			1	Legal 	2	Chief of Staff 
2	Board	12/13	X						

## PURPOSE:

The MTA Finance Department is seeking MTA and TBTA Board authorization and approval of the necessary documentation to issue refunding bonds, from time to time, subject, if applicable, to the refunding policy attached hereto adopted by the Board in May, 2010, as amended from time to time, and provided that the MTA Chief Financial Officer or the MTA Director, Finance makes a determination that the refunding of such bonds or other obligations will be beneficial to the obligors thereof and/or their affiliates and subsidiaries. The MTA Finance Department is also seeking authority to allow for a portion of the Transportation Revenue Refunding Bonds and Dedicated Tax Fund Refunding Revenue Bonds to be issued as variable rate securities to refund bonds that already meet the refunding policy requirements based on a fixed rate refunding. MTA's portfolio of outstanding indebtedness is \$36.5 billion (exclusive of State Service Contract Bonds, which debt service is paid by the State).

## DISCUSSION:

MTA and TBTA Board approval is sought for the following resolutions, documents and activities in connection with the issuance of refunding bonds:

- MTA Multiple Series Transportation Revenue Refunding Bond Supplemental Resolution (2018) authorizing Metropolitan Transportation Authority Transportation Revenue Refunding Obligations, including providing for the issuance of the following:
  - Parity Reimbursement Obligations and Parity Debt in an amount sufficient to secure any Credit Facilities entered into in connection with the issuance of the Transportation Revenue Refunding Obligations.
- MTA Multiple Series Dedicated Tax Fund Refunding Bond Supplemental Resolution (2018) authorizing Metropolitan Transportation Authority Dedicated Tax Fund Refunding Obligations, including providing for the issuance of the following:



- Parity Reimbursement Obligations and Parity Debt in an amount sufficient to secure any Credit Facilities entered into in connection with the issuance of the Dedicated Tax Fund Revenue Refunding Obligations.
- TBTA Multiple Series General Revenue Refunding Bond Supplemental Resolution (2018) authorizing Triborough Bridge and Tunnel Authority General Revenue Refunding Obligations, including providing for the issuance of the following:
  - Parity Reimbursement Obligations and other Parity Debt in an amount sufficient to secure any Credit Facilities entered into in connection with the issuance of the General Revenue Refunding Obligations.
- TBTA Multiple Series 2001 Subordinate Revenue Refunding Bond Supplemental Resolution (2018) authorizing Triborough Bridge and Tunnel Authority Subordinate Revenue Refunding Obligations, including providing for the issuance of the following:
  - Parity Reimbursement Obligations and other Parity Debt in an amount sufficient to secure any Credit Facilities entered into in connection with the issuance of the Subordinate Revenue Refunding Obligations.

With respect to the above-referenced financial transactions, MTA and TBTA Board approval, as applicable, is sought:

(a) delegating authority to the Chairman, the Managing Director, the Chair of the Finance Committee, the Vice Chairman, the Chief Financial Officer or the Director, Finance to award the obligations either pursuant to competitive bid or to members (or entities related to such firms) of the Board-approved MTA underwriting syndicate and to execute and/or deliver in each case, where appropriate:

- Notices of Sale and bid forms,
- Purchase Agreements with underwriters,
- Direct Purchase Agreements,
- Official Statements and other disclosure documents,
- Continuing Disclosure Agreements and related filings,
- Remarketing Agreements,
- Dealer and Broker/Dealer Agreements,
- Issuing and Paying Agent Agreements,
- Credit Facilities and related Parity Reimbursement Obligations and Parity Debt,
- Related Subordinated Contract Obligations,
- Verification Reports,
- Escrow Agreements, and
- Investment Agreements.

Any such documents will be in substantially the form of any document previously entered into by MTA or TBTA for previous issues, with such changes as approved by any one or more of the foregoing officers.

(b) authorizing such officers to terminate, amend, supplement, replace or extend any such documents, including existing Credit Facilities (and related Parity Reimbursement Obligations and Parity Debt), as they shall deem advisable, and to take such other actions as may be necessary or desirable to effectuate the issuance of the refunding bonds and other financial transactions set forth above, on behalf of MTA, TBTA or other MTA subsidiaries and affiliates.

## **ALTERNATIVES:**

The Board could determine that staff seek specific approval for each refunding contemplated in advance of undertaking such refunding. This alternative is not advised as the timing of the Board cycle could result in missed market opportunities.

## **RECOMMENDATION:**

The MTA and TBTA Boards approve the above-referenced resolutions and documents and all other actions described above, including the execution and delivery of such other documents, and the taking of all other actions, from time to time deemed necessary or desirable by such officers in connection therewith. The authorization to issue

# Staff Summary

the refunding bonds and take other related actions hereunder shall continue in effect without any further action by the MTA or TBTA Boards, until the adoption by the MTA and TBTA Boards, of subsequent refunding bond supplemental resolutions relating to 2019 refundings unless (a) the MTA and TBTA Boards shall have confirmed the effectiveness of this authorization for an additional period, or (b) the MTA and TBTA Boards shall have modified or repealed this authorization.

**Adopted May 26, 2010**

## **BOND AND OTHER DEBT OBLIGATIONS REFUNDING POLICY**

WHEREAS, The Metropolitan Transportation Authority has a large portfolio of outstanding bonds and other debt obligations; and

WHEREAS, The Metropolitan Transportation Authority desires to achieve the lowest possible interest cost for such bonds; and

WHEREAS, The Metropolitan Transportation Authority desires, from time to time, to benefit from favorable capital market conditions to undertake refundings of the outstanding bonds and other obligations; and

WHEREAS, The Metropolitan Transportation Authority has determined that in order to provide guidance in the issuance of refunding bonds, a refunding policy ("Refunding Policy") is desirable.

WHEREAS, such refunding bonds must be authorized by the Board in accordance with a supplemental resolution for each of the MTA and TBTA credits, such supplemental resolutions are attached hereto;

BE IT RESOLVED by the Metropolitan Transportation Authority that, except as otherwise provided by separate action of the Authority relating to a particular refunding, the Refunding Policy as set forth below shall be adopted and shall apply to all refundings of bonds or other debt obligations described therein hereafter.

<p style="text-align: center;"><b>Metropolitan Transportation Authority and Triborough Bridge and Tunnel Authority Bond and Other Debt Obligations Refunding Policy</b></p>
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This bond and other debt obligations refunding policy establishes conditions precedent to any issuance of fixed rate bonds for the purposes of refunding fixed rate bonds previously issued by the MTA or any of the Related Entities.

- For a standard fixed rate refunding, each individual bond maturity is expected to have net present value (NPV) savings (expressed as a percentage of the par amount of refunded bonds) of at least the following amounts at the time of mailing the Preliminary Official Statement and at the time of the initial pricing of the refunding bonds (nothing herein precludes the addition of individual bond maturities that meet the savings criteria, or the deletion of bond maturities that do not meet the savings criteria on the day of pricing):

		Years to Call		
Years From Call To Maturity		0 to 2	3 to 7	8 plus
	0 to 5	0.5%	1.0%	2.0%
	6 to 10	1.0%	2.5%	4.0%
	11 to 15	3.0%	4.0%	5.0%
	16 plus	4.0%	5.05%	5.5%

- In addition to achieving the above maturity-by-maturity NPV savings, aggregate NPV savings must be at least 3.0 percent of the par amount of refunded bonds.
- The arbitrage yield must be utilized in calculating NPV savings.
- Actual escrow investments must be used in calculation of refunding savings at the time of pricing.

### **Additional Criteria and Instructions**

- The evaluation of refunding opportunities with respect to the State Bond Issuance Charge (BIC) shall be factored in as a cost of issuance with respect to total NPV savings requirement calculations. The individual bond-by-bond maturity evaluations shall also include BIC as a factor.
- If it is possible to meet the arbitrage yield in a refunding escrow with SLGS, they should be used. In the event SLGS could provide a yield higher than the arbitrage yield, as many rolling 0 percent SLGS as possible should be used to blend down the arbitrage yield. If the arbitrage yield cannot be met with SLGS or the SLGS window is not open, treasury securities and other open market securities can be considered, consistent with the investment restrictions in the bond resolution.

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**METROPOLITAN TRANSPORTATION AUTHORITY**

**MULTIPLE SERIES  
TRANSPORTATION REVENUE REFUNDING BOND  
SUPPLEMENTAL RESOLUTION**

**Adopted December 13, 2017**

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## **TABLE OF CONTENTS**

Page

### **ARTICLE I**

#### **DEFINITIONS AND STATUTORY AUTHORITY**

Section 1.01. Supplemental Resolution .....	1
Section 1.02. Definitions.....	1
Section 1.03. Authority for this Supplemental Resolution .....	2

### **ARTICLE II**

#### **AUTHORIZATION OF REFUNDING BONDS**

Section 2.01. Authorized Principal Amount, Designation and Series .....	3
Section 2.02. Purposes .....	3
Section 2.03. Dates, Maturities, Principal Amounts and Interest .....	3
Section 2.04. Interest Payments .....	4
Section 2.05. Denominations, Numbers and Letters.....	4
Section 2.06. Places of Payment and Paying Agent .....	4
Section 2.07. Sinking Fund Installments .....	4
Section 2.08. Redemption Prices and Terms .....	4
Section 2.09. Delegation to an Authorized Officer.....	5
Section 2.10. Sale of Refunding Bonds .....	7
Section 2.11. Forms of Refunding Bonds and Trustee's Authentication Certificate.....	9
Section 2.12. Appointment of Trustee and Paying Agent .....	9

### **ARTICLE III**

#### **DISPOSITION OF REFUNDING BOND PROCEEDS**

Section 3.01. Disposition of Refunding Bond Proceeds.....	11
---	----

### **ARTICLE IV**

#### **TAX COVENANTS AND DEFEASANCE**

Section 4.01. Tax Covenants Relating to the Refunding Bonds.....	12
Section 4.02. Defeasance .....	12

**MULTIPLE SERIES  
TRANSPORTATION REVENUE REFUNDING BOND  
SUPPLEMENTAL RESOLUTION**

BE IT RESOLVED by the Metropolitan Transportation Authority (the “Issuer”), as follows:

**ARTICLE I**

**DEFINITIONS AND STATUTORY AUTHORITY**

**Section 1.01. Supplemental Resolution.** This resolution is supplemental to, and is adopted in accordance with Article II and Article A-VIII of, a resolution of the Issuer adopted on March 26, 2002, entitled “General Resolution Authorizing Transportation Revenue Obligations” (the “Resolution”).

**Section 1.02. Definitions.**

1. All capitalized terms which are used but not otherwise defined in this Multiple Series Transportation Revenue Refunding Bond Supplemental Resolution (the “Supplemental Resolution”) shall have the same meanings, respectively, as such terms are given by Section 102 of the Resolution.

2. In this Supplemental Resolution:

“Authorized Officer” shall include the officers designated as such in the Resolution, and the Chairman, the Managing Director, the Chair of the Finance Committee, the Vice Chairman, the Chief Financial Officer or the Director, Finance, as well as any officer duly designated as “Acting” in said officer’s capacity, except that, for the purposes of any delegation set forth herein that does not expressly include any Assistant Secretary, “Authorized Officer” shall not include any Assistant Secretary of the Issuer.

“Board” shall mean the members of the Issuer acting as such pursuant to the provisions of the Issuer Act.

“Bond Counsel” shall mean Nixon Peabody LLP, Orrick, Herrington & Sutcliffe LLP, D. Seaton and Associates, P.A., P.C., Bryant Rabbino LLP or any other attorney or firm of attorneys of nationally recognized standing in the field of law relating to the issuance of obligations by state and municipal entities, selected by the Issuer.

“Code” shall mean the Internal Revenue Code of 1986, as amended, and regulations thereunder.

“Cross-Credit Obligations” shall mean indebtedness or other obligations issued or incurred by the Issuer or any other Related Entity as described in clause (iii) of the definition of “Capital Costs”, but excluding Obligations.

“Refunding Bonds” shall mean the Transportation Revenue Bonds authorized by Article II of this Supplemental Resolution in one or more Series or subseries.

**Section 1.03. Authority for this Supplemental Resolution.** This Supplemental Resolution is adopted pursuant to the provisions of the Issuer Act and the Resolution.

*[Remainder of page intentionally left blank]*



## ARTICLE II

### AUTHORIZATION OF REFUNDING BONDS

#### **Section 2.01. Authorized Principal Amount, Designation and Series.**

1. Pursuant to the provisions of the Resolution and in order to issue (a) Refunding Obligations, and (b) Obligations for the purpose of refunding Cross-Credit Obligations, multiple Series of Transportation Revenue Obligations (which may be issued at one time or from time to time in any number of Series or subseries, which for purposes of this Supplemental Resolution shall collectively be referred to herein as the “Refunding Bonds”, subject to redesignation as hereinafter provided) entitled to the benefit, protection and security of such provisions are hereby authorized to be issued in an aggregate principal amount not exceeding the principal amount necessary so that, after giving effect to any net original issue discount or premium and underwriters’ discount from the principal amount, the amount to be deposited in the Proceeds Account pursuant to, or otherwise applied to effectuate the purposes of, Section 2.02 and Section 3.01 of this Supplemental Resolution (exclusive of the amount so deposited therein determined in any Certificate of Determination as estimated to be necessary to pay any Costs of Issuance of the Refunding Bonds payable from such Proceeds Account or otherwise applied to pay such Costs of Issuance), shall not exceed the amount or amounts determined in one or more Certificates of Determination to be necessary to effectuate the purposes set forth in Section 2.02 hereof; provided, however, that any Refunding Bonds issued pursuant to this Supplemental Resolution shall be issued in compliance with any Board policies relating to the issuance of refunding bonds as may be in effect from time to time.

2. Nothing in this Supplemental Resolution is intended to preclude the issuance of Refunding Bonds as refunding obligations in accordance with Section 203 of the Resolution.

Refunding Bonds shall be designated as, and shall be distinguished from the Obligations of all other Series by the title, “Transportation Revenue Bonds, Series [insert calendar year of issuance]” or such other title or titles set forth in the related Certificate of Determination.

The authority to issue Obligations and take related actions granted under previous resolutions of the Issuer shall continue in full force and effect. The authorization to issue the Refunding Bonds and take other related actions hereunder shall continue in effect without any further action by the Issuer until the adoption by the MTA Board of a subsequent refunding bond supplemental resolution relating to 2019 refundings.

**Section 2.02. Purposes.** The purposes for which the Refunding Bonds are issued shall be set forth in one or more Certificates of Determination and may include the refunding, restructuring or payment, including by purchasing, exchanging or tendering therefor, of all or any portion of any Outstanding Obligations or Parity Debt or Cross-Credit Obligations deemed advisable by an Authorized Officer in accordance with Section 203 or 204 of the Resolution, as applicable.

**Section 2.03. Dates, Maturities, Principal Amounts and Interest.** The Refunding Bonds, except as otherwise provided in the Resolution, shall be dated the date or dates determined

in the related Certificate of Determination. The Refunding Bonds shall mature on the date or dates and in the year or years and principal amount or amounts, and shall bear interest at the rate or rates per annum, if any, specified in or determined in the manner provided in the related Certificate of Determination.

**Section 2.04. Interest Payments.** The Refunding Bonds shall bear interest from their date or dates and be payable on such date or dates as may be determined pursuant to the related Certificate of Determination. Except as otherwise provided in the related Certificate of Determination, interest on the Refunding Bonds shall be computed on the basis of twelve 30-day months and a 360-day year.

**Section 2.05. Denominations, Numbers and Letters.** Unless otherwise provided in the related Certificate of Determination, the Refunding Bonds shall be issued in fully registered form without coupons in the denomination of \$5,000 or any integral multiple thereof.

The Refunding Bonds shall be lettered and numbered as provided in the related Certificate of Determination.

**Section 2.06. Places of Payment and Paying Agent.** Except as otherwise provided in the related Certificate of Determination, principal and Redemption Price of the Refunding Bonds shall be payable to the registered owner of each Refunding Bond when due upon presentation of such Refunding Bond at the principal corporate trust office of the Trustee. Except as otherwise provided in the related Certificate of Determination, interest on the registered Refunding Bonds will be paid by check or draft mailed on the interest payment date by the Paying Agent, to the registered owner at his address as it appears on the registration books or, at the option of any Owner of at least one million dollars (\$1,000,000) in principal amount of the Refunding Bonds, by wire transfer in immediately available funds on each interest payment date to such Owner thereof upon written notice from such Owner to the Trustee, at such address as the Trustee may from time to time notify such Owner, containing the wire transfer address (which shall be in the continental United States) to which such Owner wishes to have such wire directed, if such written notice is received not less than twenty (20) days prior to the related interest payment date (such notice may refer to multiple interest payments).

**Section 2.07. Sinking Fund Installments.** The Refunding Bonds, if any, determined in the related Certificate of Determination shall be subject to redemption (a) in part, by lot, (b) pro rata (in the case of taxable Refunding Bonds), or (c) otherwise as determined in accordance with Section A-404 of the Resolution, as set forth in the Certificate of Determination, on each date in the year or years determined in the Certificate of Determination at the principal amount thereof plus accrued interest up to but not including the date of redemption thereof, from mandatory Sinking Fund Installments which are required to be made in amounts sufficient to redeem on each such date the principal amount of such Refunding Bonds.

**Section 2.08. Redemption Prices and Terms.** The Refunding Bonds may also be subject to redemption prior to maturity, at the option of the Issuer, upon notice as provided in Article A-IV of the Resolution, at any time as a whole or in part (and by lot within a maturity, or otherwise as determined in accordance with Section A-404 of the Resolution, if less than all of a maturity is to be redeemed), from maturities designated by the Issuer on and after the date and in the years and

at the Redemption Prices (expressed as a percentage of principal amount) determined in the related Certificate of Determination, plus accrued interest up to but not including the redemption date. Notwithstanding the foregoing, in the case of taxable Refunding Bonds, if set forth in the Certificate of Determination, the taxable Refunding Bonds may be made subject to pro rata redemption and/or a make-whole redemption premium.

**Section 2.09. Delegation to an Authorized Officer.** 1. There is hereby delegated to each Authorized Officer, subject to the limitations contained in this Supplemental Resolution, the following powers with respect to the Refunding Bonds:

(a) to determine whether and when to issue any Refunding Bonds constituting Refunding Obligations or Obligations issued to refund Cross-Credit Obligations, and to determine the amount of the proceeds of the Refunding Bonds to be applied to refunding purposes as well as the specific Obligations or Parity Debt or Cross-Credit Obligations, or portions of either to be refunded and the date or dates, if any, on which such refunded obligations shall be redeemed, and the amount of the proceeds of the Refunding Bonds estimated to be necessary to pay the Costs of Issuance of the Refunding Bonds;

(b) to determine the purpose or purposes for which the Refunding Bonds are being issued, which shall be one or more of the purposes set forth in Section 2.02 of this Supplemental Resolution;

(c) to determine the principal amounts of the Refunding Bonds to be issued for the purposes set forth in Section 2.02 of this Supplemental Resolution and whether such principal amounts constitute a separate Series or a subseries of Refunding Bonds, and to determine Accreted Values and Appreciated Values, if applicable;

(d) to determine the maturity date and principal amount of each maturity of the Refunding Bonds and the amount and due date of each Sinking Fund Installment, if any;

(e) to determine the date or dates which the Refunding Bonds shall be dated and the interest rate or rates of the Refunding Bonds or the manner of determining such interest rate or rates; provided, however, that any Obligations issued as fixed rate Tax-Exempt Obligations shall be subject to a maximum interest rate of not greater than 10% per annum, any Obligations issued as fixed rate Taxable Obligations shall be subject to a maximum interest rate of not greater than 12% per annum, any Variable Interest Rate Obligations issued as Tax-Exempt Obligations shall be subject to a maximum interest rate of not greater than 15% per annum, any Variable Interest Rate Obligations issued as Taxable Obligations shall be subject to a maximum interest rate of not greater than 18% per annum and any Parity Reimbursement Obligations shall be subject to a maximum interest rate of not greater than 25% per annum, or, in each such case, such higher rate or rates as determined by the Issuer's Board;

(f) to determine the Redemption Price or Redemption Prices, if any, and the redemption terms, if any, for the Refunding Bonds; provided, however, that if the Refunding Bonds are to be redeemable at the election of the Issuer, the Redemption Price (except in the case of taxable Refunding Bonds) shall not be greater than one hundred three percent (103%) of the principal amount of the Refunding Bonds to be redeemed, plus accrued interest thereon up to but

not including the date of redemption and in the case of taxable Refunding Bonds the Redemption Price may be determined pursuant to provisions relating to pro rata redemption and/or make-whole redemption;

(g) to determine whether the sale of the Refunding Bonds shall be conducted on either a negotiated or competitive bid basis and, as applicable, to determine the purchase price for the Refunding Bonds to be paid by the purchaser or purchasers referred to in one or more Purchase Agreements or a bank direct purchase agreement, or the purchase price for the Refunding Bonds to be paid by the winning bidder, if such sale is conducted by competitive bid pursuant to a Notice of Sale, in either case as such document is described in Section 2.10 of this Supplemental Resolution, which may include such original issue discount and original issue premium as shall be determined in the related Certificate of Determination; provided, however, that the underwriters' discount reflected in such purchase price shall not exceed \$10.00 for each one thousand dollars (\$1,000) principal amount of the Refunding Bonds;

(h) to take all actions required for the Refunding Bonds to be eligible under the rules and regulations of The Depository Trust Company ("DTC") for investment and trading as uncertificated securities, to execute and deliver a standard form of letter of representation with DTC and, notwithstanding any provisions to the contrary contained in this Supplemental Resolution, to include in the related Certificate of Determination such terms and provisions as may be appropriate or necessary to provide for uncertificated securities in lieu of Refunding Bonds issuable in fully registered form;

(i) to determine whether to issue all or any portion of the Refunding Bonds as Tax-Exempt Obligations, Taxable Obligations, Put Obligations, Variable Interest Rate Obligations or as any other form of Obligations permitted by the Resolution and any matters related thereto, including (i) the terms and provisions of any such Obligations, (ii) the selection of remarketing agents, tender agents, auction agents, dealers, calculation agents, bidding agents or any other agents or parties to ancillary arrangements and the terms of any such arrangements, and (iii) the methods for determining the accrual of Debt Service;

(j) to determine the advisability, as compared to an unenhanced transaction, of obtaining one or more Credit Facilities, to select a provider or providers thereof and to determine and accept the terms and provisions and price thereof, to determine such other matters related thereto as in the opinion of the officer executing the related Certificate of Determination shall be considered necessary or appropriate and to effect such determinations by making any changes in or additions to this Supplemental Resolution required by Credit Facility providers, if any, or required by a Rating Agency in order to attain or maintain specific ratings on the Refunding Bonds, or relating to the mechanisms for the repayment of amounts advanced thereunder or payment of fees, premiums, expenses or any other amounts, notices, the provision of information, and such other matters of a technical, mechanical, procedural or descriptive nature necessary or appropriate to obtain or implement a Credit Facility with respect to the Refunding Bonds, and to make any changes in connection therewith;

(k) to make such changes in or from the form of this Supplemental Resolution as may be required by a Rating Agency in order to attain or maintain specific ratings on the Refunding Bonds;

(l) to make such changes in or from the form of this Supplemental Resolution as may be necessary or desirable in order to cure any ambiguities, inconsistencies or other defects;

(m) to determine whether to (i) enter into an escrow agreement or other arrangement in connection with the issuance of Refunding Bonds, including the selection of escrow agents, verification agents and the manner of determining specified matters relating to the defeasance of the refunded obligations and (ii) purchase SLGs or open market securities and the form and substance thereof and any related investment agreement, and to determine the application of any amounts released in connection with any such refunding;

(n) to determine that fixed rate Refunding Bonds comply with all Board policies relating to the issuance of refunding obligations in effect at the time of such determination;

(o) to determine that Refunding Bonds issued as Variable Interest Rate Obligations comply with all Board policies relating to Refunding Bonds relating to the issuance of refunding obligations in effect at the time of such determination as if such bonds were issued as fixed rate Refunding Bonds; and

(p) to determine such other matters specified in or permitted by (i) Sections 202, 203, 204 and A-201 of the Resolution or (ii) this Supplemental Resolution, and to determine matters relating to the payment or defeasance of Obligation Anticipation Notes, including preparation of any documentation therefor.

2. Any Authorized Officer shall execute one or more Certificates of Determination evidencing the determinations made pursuant to this Supplemental Resolution and any such Certificate of Determination shall be conclusive evidence of the determinations of such Authorized Officer, as stated therein. More than one Certificate of Determination may be delivered to the extent more than one Series or subseries of Refunding Bonds are delivered from time to time, or other authority is exercised under this Supplemental Resolution from time to time and each such Certificate of Determination shall be delivered to the Trustee prior to the authentication and delivery of the respective Series or subseries of Refunding Bonds by the Trustee or other documentation. Determinations set forth in any Certificate of Determination shall have the same effect as if set forth in this Supplemental Resolution. Any such Authorized Officer may exercise any authority delegated under this Supplemental Resolution from time to time following issuance of any Refunding Bonds, as appropriate for any purposes, including, in order to change interest rate modes or auction periods, if any Refunding Bonds shall consist of multiple subseries, to change the principal amounts and number of the individual subseries or to combine all subseries into a single Series, if any Refunding Bonds consist of a single Series, to divide such Series into two or more subseries and to determine the principal amount of such subseries, obtain a substitute or additional Credit Facility, enter into a bank direct purchase agreement or similar instrument, or to appoint new or additional agents or other parties deemed appropriate to a particular form or mode of Obligation or manner of sale.

**Section 2.10. Sale of Refunding Bonds.** Each Authorized Officer is hereby authorized either (i) to sell and award all or any portion of the Refunding Bonds through a competitive bidding process to purchasers meeting the requirements of one or more Notices of Sale (as hereinafter defined) to be published in order to give notice of the competitive sale of the Refunding Bonds;

(ii) to sell and award all or any portion of the Refunding Bonds through a negotiated sale to the purchasers who are referred to in the bond purchase agreement and who shall be selected from the then current list of approved underwriters; or (iii) to sell and award all or any portion of the Refunding Bonds through a direct sale to the financial institution or institutions selected by the Authorized Officer who shall be referred to in the continuing covenant, direct purchase or similar agreement. Each Authorized Officer is hereby authorized to sell and award the Refunding Bonds to the purchasers referred to in the preceding sentence in the case of a bond purchase agreement, in substantially the form most recently executed or delivered by the Issuer in connection with the sale of Obligations, or, with respect to a continuing covenant, direct purchase or similar agreement, containing bank facility terms and provisions (including, without limitation, increased costs, term-out, events of default and remedies) in substantially the form set forth in a letter of credit reimbursement agreement most recently executed or delivered by the Issuer, including, if applicable, that the direct purchaser offer to the Issuer a term-out provision of no less than five years, with such revisions to reflect the terms and provisions of the Refunding Bonds as may be approved by the officer executing the bond purchase, continuing covenant or similar agreement (each, a "Purchase Agreement"). Each Authorized Officer is hereby authorized to agree to the selection of the representative of the underwriters or the other purchasers or facility providers as referred to in the Purchase Agreement or Agreements and to execute and deliver the Purchase Agreement or Agreements for and on behalf and in the name of the Issuer with such changes, omissions, insertions and revisions as may be approved by the officer executing the Purchase Agreement or Agreements, said execution being conclusive evidence of such approval and concurrence in the selection of the representative of the underwriters..

If it is determined that any sale of Bonds shall be conducted on a competitive bid basis, each Authorized Officer is hereby further authorized to conduct the sale and award of the Refunding Bonds on the basis of a competitive bid, pursuant to the terms of a notice of sale, including bid form (the "Notice of Sale"), in a form, including any limitations on permitted bidders and a description of the basis for determining the winning bidder or bidders, determined by such Authorized Officer. Each Authorized Officer is hereby authorized to conduct such competitive sale of the Refunding Bonds in a manner consistent with this Supplemental Resolution and to utilize the services of the Authority's financial advisor and the services of an electronic bidding service, as such Authorized Officer shall determine, and the execution by such Authorized Officer of a letter of award shall be conclusive evidence of such award.

Each Authorized Officer is hereby authorized to make public and to authorize the use and distribution by said purchasers or other appropriate parties of a preliminary official statement, offering circular, or other disclosure document (the "Preliminary Official Statement") in connection with each public offering or any private placement of the Refunding Bonds, in substantially the form most recently executed or delivered by the Issuer in connection with the sale of Obligations, with such changes, omissions, insertions and revisions as such officer shall deem advisable. The Issuer authorizes any of said officers to deliver a certification to the effect that such Preliminary Official Statement or Official Statement, if deemed necessary or appropriate, together with such other documents, if any, described in such certificate, was deemed final as of its date for purposes of Rule 15c2-12 of the Securities and Exchange Commission as applicable.

Each Authorized Officer is hereby authorized to make public and to authorize distribution of a final Official Statement in substantially the form of each Preliminary Official Statement or

the most recently executed and delivered Official Statement if there is not a Preliminary Official Statement, with such changes, omissions, insertions and revisions as such officer shall deem advisable, to sign such Official Statement and to deliver such Official Statement to the purchasers of such issue of the Refunding Bonds, such execution being conclusive evidence of the approval of such changes, omissions, insertions and revisions.

Each Authorized Officer is hereby authorized to execute and deliver for and on behalf and in the name of the Issuer, to the extent determined by such Authorized Officer to be necessary or convenient, a Continuing Disclosure Agreement, substantially in the form appended to the Purchase Agreement or Notice of Sale, with such changes, omissions, insertions and revisions as such officer shall deem advisable (the "Continuing Disclosure Agreement"), said execution being conclusive evidence of the approval of such changes, omissions, insertions and revisions.

The proceeds of each good faith check, if any, received by the Issuer from the purchasers of each issue of Refunding Bonds under the terms of the related Purchase Agreement or Notice of Sale may be invested by the Issuer pending application of the proceeds of such good faith check for the purposes provided in Section 2.02 of this Supplemental Resolution at the time of the issuance and delivery of such Refunding Bonds.

Each Authorized Officer (including any Assistant Secretary of the Issuer) is hereby authorized and directed to execute, deliver, amend, replace or terminate any and all documents and instruments (including any remarketing agreements, dealer agreements, broker-dealer agreements, tender agent agreements, or auction agency agreements, any escrow agreements, any investment agreements or arrangements, or any reimbursement agreements or documents or instruments relating to a Credit Facility deemed appropriate to a given form or mode of an Obligation) and to do and cause to be done any and all acts necessary or proper for carrying out each Purchase Agreement or Notice of Sale, each Continuing Disclosure Agreement, the terms of any Credit Facility or other such agreement or arrangement, and the issuance, sale and delivery of each issue of the Refunding Bonds and for implementing the terms of each issue of the Refunding Bonds and the transactions contemplated hereby or thereby.

When reference is made in this Supplemental Resolution to the authorization of an Authorized Officer to do any act, such act may be accomplished by any of such officers individually.

**Section 2.11. Forms of Refunding Bonds and Trustee's Authentication Certificate.** Subject to the provisions of the Resolution, the form of registered Refunding Bonds, and the Trustee's certificate of authentication, shall be substantially in the form set forth in Exhibit One to the Resolution including, if necessary, any changes to comply with the requirements of DTC or the provisions of this Supplemental Resolution or any Certificate of Determination.

**Section 2.12. Appointment of Trustee and Paying Agent.** Unless otherwise provided by Certificate of Determination, The Bank of New York Mellon, as successor in interest to JPMorgan Chase Bank, N.A. shall be the Trustee under the Resolution and the Paying Agent for the Refunding Bonds.

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## ARTICLE III

### DISPOSITION OF REFUNDING BOND PROCEEDS

**Section 3.01. Disposition of Refunding Bond Proceeds.** Any proceeds of the sale of the Refunding Bonds, other than accrued interest, if any, shall be deposited, simultaneously with the issuance and delivery of the Refunding Bonds, at one time or from time to time in one or more Series or subseries, in the Proceeds Account which is deemed to be established for each Series in the Proceeds Fund to be applied, or shall otherwise be applied pursuant to a Certificate of Determination to:

(a) the refunding of any Obligations, Parity Debt or Cross-Credit Obligations, or portions of any of them, in accordance with Section 2.02 hereof; and

(b) the balance of such proceeds, exclusive of accrued interest, shall be deposited in the Costs of Issuance Account and applied to the payment of Costs of Issuance or otherwise applied to the payment of Costs of Issuance.

Unless otherwise provided in a Certificate of Determination, the accrued interest, if any, and any capitalized interest received on the sale of the Refunding Bonds shall be deposited in the Debt Service Fund.

## ARTICLE IV

### TAX COVENANTS AND DEFEASANCE

**Section 4.01. Tax Covenants Relating to the Refunding Bonds.** The Issuer covenants that, in order to maintain the exclusion from gross income for Federal income tax purposes of the interest on the Refunding Bonds issued as Tax-Exempt Obligations, the Issuer will satisfy, or take such actions as are necessary to cause to be satisfied, each provision of the Code necessary to maintain such exclusion. In furtherance of this covenant, the Issuer agrees to comply with such written instructions as may be provided by Bond Counsel. In furtherance of the covenant contained in the preceding sentence, the Issuer agrees to continually comply with the provisions of any “Arbitrage and Use of Proceeds Certificate” or “Tax Certificate” to be executed by the Issuer in connection with the execution and delivery of any Refunding Bonds issued as Tax-Exempt Obligations, as amended from time to time.

Notwithstanding any other provision of the Resolution to the contrary, upon the Issuer’s failure to observe, or refusal to comply with, the above covenant (a) the Owners of the Refunding Bonds, or the Trustee acting on their behalf, shall be entitled to the rights and remedies provided to Owners or the Trustee under Section 702 of the Resolution, and (b) neither the Owners of the Obligations of any Series or holders of any Parity Debt (other than the Refunding Bonds or the Trustee acting on their behalf), nor the Trustee acting on their behalf, shall be entitled to exercise any right or remedy provided to the Owners, the Parity Debt holders or the Trustee under the Resolution based upon the Issuer’s failure to observe, or refusal to comply with, the above covenant.

The provisions of the foregoing covenants set forth in this Section shall not apply to any Refunding Bonds, including any subseries thereof, which the Issuer determines pursuant to the applicable Certificate of Determination to issue as Taxable Obligations.

**Section 4.02. Defeasance.** In the event the Issuer shall seek, prior to the maturity or redemption date thereof, to pay or cause to be paid, within the meaning and with the effect expressed in the Resolution, all or less than all Outstanding Refunding Bonds issued as Tax-Exempt Obligations and the provisions of Section 4.01 hereof shall then be of any force or effect, then, notwithstanding the provisions of Article A-XI of the Resolution, the Refunding Bonds issued as Tax-Exempt Obligations which the Issuer then seeks to pay or cause to be paid shall not be deemed to have been paid within the meaning and with the effect expressed in Section A-1101 of the Resolution unless (i) the Issuer has confirmed in writing that the Owners of the Refunding Bonds issued as Tax-Exempt Obligations which the Issuer then seeks to pay or cause to be paid will continue, after such action, to have the benefit of a covenant to the effect of the covenant of the Issuer contained in Section 4.01 hereof or (ii) there shall have been delivered to the Trustee an Opinion of Bond Counsel to the effect that non-compliance thereafter with the applicable provisions of the Code will not affect the then current treatment of interest on the Refunding Bonds issued as Tax-Exempt Obligations in determining gross income for Federal income tax purposes.

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**METROPOLITAN TRANSPORTATION AUTHORITY**

**MULTIPLE SERIES  
DEDICATED TAX FUND REFUNDING BOND  
SUPPLEMENTAL RESOLUTION**

**Adopted December 13, 2017**

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## **TABLE OF CONTENTS**

Page

### **ARTICLE I**

#### **DEFINITIONS AND STATUTORY AUTHORITY**

Section 1.01. Supplemental Resolution .....	1
Section 1.02. Definitions.....	1
Section 1.03. Authority for this Supplemental Resolution .....	2

### **ARTICLE II**

#### **AUTHORIZATION OF REFUNDING BONDS**

Section 2.01. Authorized Principal Amount, Designation and Series .....	3
Section 2.02. Purposes .....	3
Section 2.03. Dates, Maturities, Principal Amounts and Interest .....	3
Section 2.04. Interest Payments .....	4
Section 2.05. Denominations, Numbers and Letters.....	4
Section 2.06. Places of Payment and Paying Agent .....	4
Section 2.07. Sinking Fund Installments .....	4
Section 2.08. Redemption Prices and Terms .....	4
Section 2.09. Delegation to an Authorized Officer.....	5
Section 2.10. Sale of Refunding Bonds .....	7
Section 2.11. Forms of Refunding Bonds and Trustee's Authentication Certificate.....	9
Section 2.12. Appointment of Trustee and Paying Agent .....	9

### **ARTICLE III**

#### **DISPOSITION OF REFUNDING BOND PROCEEDS**

Section 3.01. Disposition of Refunding Bond Proceeds.....	10
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### **ARTICLE IV**

#### **TAX COVENANTS AND DEFEASANCE**

Section 4.01. Tax Covenants Relating to the Refunding Bonds.....	11
Section 4.02. Defeasance .....	11

**MULTIPLE SERIES  
DEDICATED TAX FUND REFUNDING BOND  
SUPPLEMENTAL RESOLUTION**

BE IT RESOLVED by the Metropolitan Transportation Authority (the “Issuer”), as follows:

**ARTICLE I**

**DEFINITIONS AND STATUTORY AUTHORITY**

**Section 1.01. Supplemental Resolution.** This resolution is supplemental to, and is adopted in accordance with Article II and Article A-VIII of, a resolution of the Issuer adopted on March 26, 2002, entitled “Dedicated Tax Fund Obligation Resolution” (the “Resolution”).

**Section 1.02. Definitions.**

1. All capitalized terms which are used but not otherwise defined in this Multiple Series Dedicated Tax Fund Refunding Bond Supplemental Resolution (the “Supplemental Resolution”) shall have the same meanings, respectively, as such terms are given by Section 102 of the Resolution.

2. In this Supplemental Resolution:

“Authorized Officer” shall include the officers designated as such in the Resolution, and the Chairman, the Managing Director, the Chair of the Finance Committee, the Vice Chairman, the Chief Financial Officer or the Director, Finance, as well as any officer duly designated as “Acting” in said officer’s capacity, except that, for the purposes of any delegation set forth herein that does not expressly include any Assistant Secretary, “Authorized Officer” shall not include any Assistant Secretary of the Issuer.

“Board” shall mean the members of the Issuer acting as such pursuant to the provisions of the Issuer Act.

“Bond Counsel” shall mean Nixon Peabody LLP, Orrick, Herrington & Sutcliffe LLP, D. Seaton and Associates, P.A., P.C., Bryant Rabbino LLP or any other attorney or firm of attorneys of nationally recognized standing in the field of law relating to the issuance of obligations by state and municipal entities, selected by the Issuer.

“Code” shall mean the Internal Revenue Code of 1986, as amended, and regulations thereunder.

“Cross-Credit Obligations” shall mean indebtedness or other obligations issued or incurred by the Issuer or any other Related Entity as described in clause (iii) of the definition of “Capital Costs”, but excluding Obligations.

“Refunding Bonds” shall mean the Dedicated Tax Fund Bonds authorized by Article II of this Supplemental Resolution in one or more Series or subseries.

**Section 1.03. Authority for this Supplemental Resolution.** This Supplemental Resolution is adopted pursuant to the provisions of the Issuer Act and the Resolution.

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## ARTICLE II

### AUTHORIZATION OF REFUNDING BONDS

#### **Section 2.01. Authorized Principal Amount, Designation and Series.**

1. Pursuant to the provisions of the Resolution and in order to issue (a) Refunding Obligations, and (b) Obligations for the purpose of refunding Cross-Credit Obligations, multiple Series of Dedicated Tax Fund Obligations (which may be issued at one time or from time to time in any number of Series or subseries, which for purposes of this Supplemental Resolution shall collectively be referred to herein as the “Refunding Bonds”, subject to redesignation as hereinafter provided) entitled to the benefit, protection and security of such provisions are hereby authorized to be issued in an aggregate principal amount not exceeding the principal amount necessary so that, after giving effect to any net original issue discount or premium and underwriters’ discount from the principal amount, the amount to be deposited in the Proceeds Account pursuant to, or otherwise applied to effectuate the purposes of, Section 2.02 and Section 3.01 of this Supplemental Resolution (exclusive of the amount so deposited therein determined in any Certificate of Determination as estimated to be necessary to pay any Costs of Issuance of the Refunding Bonds payable from such Proceeds Account or otherwise applied to pay such Costs of Issuance), shall not exceed the amount or amounts determined in one or more Certificates of Determination to be necessary to effectuate the purposes set forth in Section 2.02 hereof; provided, however, that any Refunding Bonds issued pursuant to this Supplemental Resolution shall be issued in compliance with any Board policies relating to the issuance of refunding bonds as may be in effect from time to time.

2. Nothing in this Supplemental Resolution is intended to preclude the issuance of Refunding Bonds as refunding obligations in accordance with Section 203 of the Resolution.

Refunding Bonds shall be designated as, and shall be distinguished from the Obligations of all other Series by the title, “Dedicated Tax Fund Bonds, Series [insert calendar year of issuance]” or such other title or titles set forth in the related Certificate of Determination.

The authority to issue Obligations and take related actions granted under previous resolutions of the Issuer shall continue in full force and effect. The authorization to issue the Refunding Bonds and take other related actions hereunder shall continue in effect without any further action by the Issuer until the adoption by the MTA Board of a subsequent refunding bond supplemental resolution relating to 2019 refundings.

**Section 2.02. Purposes.** The purposes for which the Refunding Bonds are issued shall be set forth in one or more Certificates of Determination and may include the refunding, restructuring or payment, including by purchasing, exchanging or tendering therefor, of all or any portion of any Outstanding Obligations or Parity Debt or Cross-Credit Obligations deemed advisable by an Authorized Officer in accordance with Section 203 or 204 of the Resolution, as applicable.

**Section 2.03. Dates, Maturities, Principal Amounts and Interest.** The Refunding Bonds, except as otherwise provided in the Resolution, shall be dated the date or dates determined

in the related Certificate of Determination. The Refunding Bonds shall mature on the date or dates and in the year or years and principal amount or amounts, and shall bear interest at the rate or rates per annum, if any, specified in or determined in the manner provided in the related Certificate of Determination.

**Section 2.04. Interest Payments.** The Refunding Bonds shall bear interest from their date or dates and be payable on such date or dates as may be determined pursuant to the related Certificate of Determination. Except as otherwise provided in the related Certificate of Determination, interest on the Refunding Bonds shall be computed on the basis of twelve 30-day months and a 360-day year.

**Section 2.05. Denominations, Numbers and Letters.** Unless otherwise provided in the related Certificate of Determination, the Refunding Bonds shall be issued in fully registered form without coupons in the denomination of \$5,000 or any integral multiple thereof.

The Refunding Bonds shall be lettered and numbered as provided in the related Certificate of Determination.

**Section 2.06. Places of Payment and Paying Agent.** Except as otherwise provided in the related Certificate of Determination, principal and Redemption Price of the Refunding Bonds shall be payable to the registered owner of each Refunding Bond when due upon presentation of such Refunding Bond at the principal corporate trust office of the Trustee. Except as otherwise provided in the related Certificate of Determination, interest on the registered Refunding Bonds will be paid by check or draft mailed on the interest payment date by the Paying Agent, to the registered owner at his address as it appears on the registration books or, at the option of any Owner of at least one million dollars (\$1,000,000) in principal amount of the Refunding Bonds, by wire transfer in immediately available funds on each interest payment date to such Owner thereof upon written notice from such Owner to the Trustee, at such address as the Trustee may from time to time notify such Owner, containing the wire transfer address (which shall be in the continental United States) to which such Owner wishes to have such wire directed, if such written notice is received not less than twenty (20) days prior to the related interest payment date (such notice may refer to multiple interest payments).

**Section 2.07. Sinking Fund Installments.** The Refunding Bonds, if any, determined in the related Certificate of Determination shall be subject to redemption (a) in part, by lot, (b) pro rata (in the case of taxable Refunding Bonds), or (c) otherwise as determined in accordance with Section A-404 of the Resolution, as set forth in the Certificate of Determination, on each date in the year or years determined in the Certificate of Determination at the principal amount thereof plus accrued interest up to but not including the date of redemption thereof, from mandatory Sinking Fund Installments which are required to be made in amounts sufficient to redeem on each such date the principal amount of such Refunding Bonds.

**Section 2.08. Redemption Prices and Terms.** The Refunding Bonds may also be subject to redemption prior to maturity, at the option of the Issuer, upon notice as provided in Article A-IV of the Resolution, at any time as a whole or in part (and by lot within a maturity, or otherwise as determined in accordance with Section A-404 of the Resolution, if less than all of a maturity is to be redeemed), from maturities designated by the Issuer on and after the date and in the years and



at the Redemption Prices (expressed as a percentage of principal amount) determined in the related Certificate of Determination, plus accrued interest up to but not including the redemption date. Notwithstanding the foregoing, in the case of taxable Refunding Bonds, if set forth in the Certificate of Determination, the taxable Refunding Bonds may be made subject to pro rata redemption and/or a make-whole redemption premium.

**Section 2.09. Delegation to an Authorized Officer.** 1. There is hereby delegated to each Authorized Officer, subject to the limitations contained in this Supplemental Resolution, the following powers with respect to the Refunding Bonds:

(a) to determine whether and when to issue any Refunding Bonds constituting Refunding Obligations or Obligations issued to refund Cross-Credit Obligations, and to determine the amount of the proceeds of the Refunding Bonds to be applied to refunding purposes as well as the specific Obligations or Parity Debt or Cross-Credit Obligations, or portions of either to be refunded and the date or dates, if any, on which such refunded obligations shall be redeemed, and the amount of the proceeds of the Refunding Bonds estimated to be necessary to pay the Costs of Issuance of the Refunding Bonds;

(b) to determine the purpose or purposes for which the Refunding Bonds are being issued, which shall be one or more of the purposes set forth in Section 2.02 of this Supplemental Resolution;

(c) to determine the principal amounts of the Refunding Bonds to be issued for the purposes set forth in Section 2.02 of this Supplemental Resolution and whether such principal amounts constitute a separate Series or a subseries of Refunding Bonds, and to determine Accreted Values and Appreciated Values, if applicable;

(d) to determine the maturity date and principal amount of each maturity of the Refunding Bonds and the amount and due date of each Sinking Fund Installment, if any;

(e) to determine the date or dates which the Refunding Bonds shall be dated and the interest rate or rates of the Refunding Bonds or the manner of determining such interest rate or rates; provided, however, that any Obligations issued as fixed rate Tax-Exempt Obligations shall be subject to a maximum interest rate of not greater than 10% per annum, any Obligations issued as fixed rate Taxable Obligations shall be subject to a maximum interest rate of not greater than 12% per annum, any Variable Interest Rate Obligations issued as Tax-Exempt Obligations shall be subject to a maximum interest rate of not greater than 15% per annum, any Variable Interest Rate Obligations issued as Taxable Obligations shall be subject to a maximum interest rate of not greater than 18% per annum and any Parity Reimbursement Obligations shall be subject to a maximum interest rate of not greater than 25% per annum, or, in each such case, such higher rate or rates as determined by the Issuer's Board;

(f) to determine the Redemption Price or Redemption Prices, if any, and the redemption terms, if any, for the Refunding Bonds; provided, however, that if the Refunding Bonds are to be redeemable at the election of the Issuer, the Redemption Price (except in the case of taxable Refunding Bonds) shall not be greater than one hundred three percent (103%) of the principal amount of the Refunding Bonds to be redeemed, plus accrued interest thereon up to but

not including the date of redemption and in the case of taxable Refunding Bonds the Redemption Price may be determined pursuant to provisions relating to pro rata redemption and/or make whole redemption;

(g) to determine whether the sale of the Refunding Bonds shall be conducted on either a negotiated or competitive bid basis and, as applicable, to determine the purchase price for the Refunding Bonds to be paid by the purchaser or purchasers referred to in one or more Purchase Agreements or a bank direct purchase agreement, or the purchase price for the Refunding Bonds to be paid by the winning bidder, if such sale is conducted by competitive bid pursuant to a Notice of Sale, in either case as such document is described in Section 2.10 of this Supplemental Resolution, which may include such original issue discount and original issue premium as shall be determined in the related Certificate of Determination; provided, however, that the underwriters' discount reflected in such purchase price shall not exceed \$10.00 for each one thousand dollars (\$1,000) principal amount of the Refunding Bonds;

(h) to take all actions required for the Refunding Bonds to be eligible under the rules and regulations of The Depository Trust Company ("DTC") for investment and trading as uncertificated securities, to execute and deliver a standard form of letter of representation with DTC and, notwithstanding any provisions to the contrary contained in this Supplemental Resolution, to include in the related Certificate of Determination such terms and provisions as may be appropriate or necessary to provide for uncertificated securities in lieu of Refunding Bonds issuable in fully registered form;

(i) to determine whether to issue all or any portion of the Refunding Bonds as Tax-Exempt Obligations, Taxable Obligations, Put Obligations, Variable Interest Rate Obligations or as any other form of Obligations permitted by the Resolution and any matters related thereto, including (i) the terms and provisions of any such Obligations, (ii) the selection of remarketing agents, tender agents, auction agents, dealers, calculation agents, bidding agents or any other agents or parties to ancillary arrangements and the terms of any such arrangements, and (iii) the methods for determining the accrual of Debt Service;

(j) to determine the advisability, as compared to an unenhanced transaction, of obtaining one or more Credit Facilities, to select a provider or providers thereof and to determine and accept the terms and provisions and price thereof, to determine such other matters related thereto as in the opinion of the officer executing the related Certificate of Determination shall be considered necessary or appropriate and to effect such determinations by making any changes in or additions to this Supplemental Resolution required by Credit Facility providers, if any, or required by a Rating Agency in order to attain or maintain specific ratings on the Refunding Bonds, or relating to the mechanisms for the repayment of amounts advanced thereunder or payment of fees, premiums, expenses or any other amounts, notices, the provision of information, and such other matters of a technical, mechanical, procedural or descriptive nature necessary or appropriate to obtain or implement a Credit Facility with respect to the Refunding Bonds, and to make any changes in connection therewith;

(k) to make such changes in or from the form of this Supplemental Resolution as may be required by a Rating Agency in order to attain or maintain specific ratings on the Refunding Bonds;

(l) to make such changes in or from the form of this Supplemental Resolution as may be necessary or desirable in order to cure any ambiguities, inconsistencies or other defects;

(m) to determine whether to (i) enter into an escrow agreement or other arrangement in connection with the issuance of Refunding Bonds, including the selection of escrow agents, verification agents and the manner of determining specified matters relating to the defeasance of the refunded obligations and (ii) purchase SLGs or open market securities and the form and substance thereof and any related investment agreement, and to determine the application of any amounts released in connection with any such refunding;

(n) to determine that fixed rate Refunding Bonds comply with all Board policies relating to the issuance of refunding obligations in effect at the time of such determination;

(o) to determine that Refunding Bonds issued as Variable Interest Rate Obligations comply with all Board policies relating to Refunding Bonds relating to the issuance of refunding obligations in effect at the time of such determination as if such bonds were issued as fixed rate Refunding Bonds; and

(p) to determine such other matters specified in or permitted by (i) Sections 202, 203, 204 and A-201 of the Resolution or (ii) this Supplemental Resolution, and to determine matters relating to the payment or defeasance of Obligation Anticipation Notes, including preparation of any documentation therefor.

2. Any Authorized Officer shall execute one or more Certificates of Determination evidencing the determinations made pursuant to this Supplemental Resolution and any such Certificate of Determination shall be conclusive evidence of the determinations of such Authorized Officer, as stated therein. More than one Certificate of Determination may be delivered to the extent more than one Series or subseries of Refunding Bonds are delivered from time to time, or other authority is exercised under this Supplemental Resolution from time to time and each such Certificate of Determination shall be delivered to the Trustee prior to the authentication and delivery of the respective Series or subseries of Refunding Bonds by the Trustee or other documentation. Determinations set forth in any Certificate of Determination shall have the same effect as if set forth in this Supplemental Resolution. Any such Authorized Officer may exercise any authority delegated under this Supplemental Resolution from time to time following issuance of any Refunding Bonds, as appropriate for any purposes, including, in order to change interest rate modes or auction periods, if any Refunding Bonds shall consist of multiple subseries, to change the principal amounts and number of the individual subseries or to combine all subseries into a single Series, if any Refunding Bonds consist of a single Series, to divide such Series into two or more subseries and to determine the principal amount of such subseries, obtain a substitute or additional Credit Facility, enter into a bank direct purchase agreement or similar instrument or to appoint new or additional agents or other parties deemed appropriate to a particular form or mode of Obligation or manner of sale.

**Section 2.10. Sale of Refunding Bonds.** Each Authorized Officer is hereby authorized either (i) to sell and award all or any portion of the Refunding Bonds through a competitive bidding process to purchasers meeting the requirements of one or more Notices of Sale (as hereinafter defined) to be published in order to give notice of the competitive sale of the Refunding Bonds;

(ii) to sell and award all or any portion of the Refunding Bonds through a negotiated sale to the purchasers who are referred to in the bond purchase agreement and who shall be selected from the then current list of approved underwriters; or (iii) to sell and award all or any portion of the Refunding Bonds through a direct sale to the financial institution or institutions selected by the Authorized Officer who shall be referred to in the continuing covenant, direct purchase or similar agreement. Each Authorized Officer is hereby authorized to sell and award the Refunding Bonds to the purchasers referred to in the preceding sentence in the case of a bond purchase agreement, in substantially the form most recently executed or delivered by the Issuer in connection with the sale of Obligations, or, with respect to a continuing covenant, direct purchase or similar agreement, containing bank facility terms and provisions (including, without limitation, increased costs, term-out, events of default and remedies) in substantially the form set forth in a letter of credit reimbursement agreement most recently executed or delivered by the Issuer, including, if applicable, that the direct purchaser offer to the Issuer a term-out provision of no less than five years, with such revisions to reflect the terms and provisions of the Refunding Bonds as may be approved by the officer executing the bond purchase, continuing covenant or similar agreement (each, a "Purchase Agreement"). Each Authorized Officer is hereby authorized to agree to the selection of the representative of the underwriters or the other purchasers or facility providers as referred to in the Purchase Agreement or Agreements and to execute and deliver the Purchase Agreement or Agreements for and on behalf and in the name of the Issuer with such changes, omissions, insertions and revisions as may be approved by the officer executing the Purchase Agreement or Agreements, said execution being conclusive evidence of such approval and concurrence in the selection of the representative of the underwriters.

If it is determined that any sale of Bonds shall be conducted on a competitive bid basis, each Authorized Officer is hereby further authorized to conduct the sale and award of the Refunding Bonds on the basis of a competitive bid, pursuant to the terms of a notice of sale, including bid form (the "Notice of Sale"), in a form, including any limitations on permitted bidders and a description of the basis for determining the winning bidder or bidders, determined by such Authorized Officer. Each Authorized Officer is hereby authorized to conduct such competitive sale of the Refunding Bonds in a manner consistent with this Supplemental Resolution and to utilize the services of the Authority's financial advisor and the services of an electronic bidding service, as such Authorized Officer shall determine, and the execution by such Authorized Officer of a letter of award shall be conclusive evidence of such award.

Each Authorized Officer is hereby authorized to make public and to authorize the use and distribution by said purchasers or other appropriate parties of a preliminary official statement, offering circular, or other disclosure document (the "Preliminary Official Statement") in connection with each public offering or any private placement of the Refunding Bonds, in substantially the form most recently executed or delivered by the Issuer in connection with the sale of Obligations, with such changes, omissions, insertions and revisions as such officer shall deem advisable. The Issuer authorizes any of said officers to deliver a certification to the effect that such Preliminary Official Statement or Official Statement, if deemed necessary or appropriate, together with such other documents, if any, described in such certificate, was deemed final as of its date for purposes of Rule 15c2-12 of the Securities and Exchange Commission as applicable.

Each Authorized Officer is hereby authorized to make public and to authorize distribution of a final Official Statement in substantially the form of each Preliminary Official Statement or

the most recently executed and delivered Official Statement if there is not a Preliminary Official Statement, with such changes, omissions, insertions and revisions as such officer shall deem advisable, to sign such Official Statement and to deliver such Official Statement to the purchasers of such issue of the Refunding Bonds, such execution being conclusive evidence of the approval of such changes, omissions, insertions and revisions.

Each Authorized Officer is hereby authorized to execute and deliver for and on behalf and in the name of the Issuer, to the extent determined by such Authorized Officer to be necessary or convenient, a Continuing Disclosure Agreement, substantially in the form appended to the Purchase Agreement or Notice of Sale, with such changes, omissions, insertions and revisions as such officer shall deem advisable (the "Continuing Disclosure Agreement"), said execution being conclusive evidence of the approval of such changes, omissions, insertions and revisions.

The proceeds of each good faith check, if any, received by the Issuer from the purchasers of each issue of Refunding Bonds under the terms of the related Purchase Agreement or Notice of Sale may be invested by the Issuer pending application of the proceeds of such good faith check for the purposes provided in Section 2.02 of this Supplemental Resolution at the time of the issuance and delivery of such Refunding Bonds.

Each Authorized Officer (including any Assistant Secretary of the Issuer) is hereby authorized and directed to execute, deliver, amend, replace or terminate any and all documents and instruments (including any remarketing agreements, dealer agreements, broker-dealer agreements, tender agent agreements, or auction agency agreements, any escrow agreements, any investment agreements or arrangements, or any reimbursement agreements or documents or instruments relating to a Credit Facility deemed appropriate to a given form or mode of an Obligation) and to do and cause to be done any and all acts necessary or proper for carrying out each Purchase Agreement or Notice of Sale, each Continuing Disclosure Agreement, the terms of any Credit Facility or other such agreement or arrangement, and the issuance, sale and delivery of each issue of the Refunding Bonds and for implementing the terms of each issue of the Refunding Bonds and the transactions contemplated hereby or thereby.

When reference is made in this Supplemental Resolution to the authorization of an Authorized Officer to do any act, such act may be accomplished by any of such officers individually.

**Section 2.11. Forms of Refunding Bonds and Trustee's Authentication Certificate.** Subject to the provisions of the Resolution, the form of registered Refunding Bonds, and the Trustee's certificate of authentication, shall be substantially in the form set forth in Exhibit One to the Resolution including, if necessary, any changes to comply with the requirements of DTC or the provisions of this Supplemental Resolution or any Certificate of Determination.

**Section 2.12. Appointment of Trustee and Paying Agent.** Unless otherwise provided by Certificate of Determination, The Bank of New York Mellon shall be the Trustee under the Resolution and the Paying Agent for the Refunding Bonds.

## ARTICLE III

### DISPOSITION OF REFUNDING BOND PROCEEDS

**Section 3.01. Disposition of Refunding Bond Proceeds.** Any proceeds of the sale of the Refunding Bonds, other than accrued interest, if any, shall be deposited, simultaneously with the issuance and delivery of the Refunding Bonds, at one time or from time to time in one or more Series or subseries, in the Proceeds Account which is deemed to be established for each Series in the Proceeds Fund to be applied, or shall otherwise be applied pursuant to a Certificate of Determination to:

(a) the refunding of any Obligations, Parity Debt or Cross-Credit Obligations, or portions of any of them, in accordance with Section 2.02 hereof; and

(b) the balance of such proceeds, exclusive of accrued interest, shall be deposited in the COI Account and applied to the payment of Costs of Issuance or otherwise applied to the payment of Costs of Issuance.

Unless otherwise provided in a Certificate of Determination, the accrued interest, if any, and any capitalized interest, received on the sale of the Refunding Bonds shall be deposited in the Debt Service Fund.

## ARTICLE IV

### TAX COVENANTS AND DEFEASANCE

**Section 4.01. Tax Covenants Relating to the Refunding Bonds.** The Issuer covenants that, in order to maintain the exclusion from gross income for Federal income tax purposes of the interest on the Refunding Bonds issued as Tax-Exempt Obligations, the Issuer will satisfy, or take such actions as are necessary to cause to be satisfied, each provision of the Code necessary to maintain such exclusion. In furtherance of this covenant, the Issuer agrees to comply with such written instructions as may be provided by Bond Counsel. In furtherance of the covenant contained in the preceding sentence, the Issuer agrees to continually comply with the provisions of any “Arbitrage and Use of Proceeds Certificate” or “Tax Certificate” to be executed by the Issuer in connection with the execution and delivery of any Refunding Bonds issued as Tax-Exempt Obligations, as amended from time to time.

Notwithstanding any other provision of the Resolution to the contrary, upon the Issuer’s failure to observe, or refusal to comply with, the above covenant (a) the Owners of the Refunding Bonds, or the Trustee acting on their behalf, shall be entitled to the rights and remedies provided to Owners or the Trustee under Section 702 of the Resolution, and (b) neither the Owners of the Obligations of any Series or holders of any Parity Debt (other than the Refunding Bonds or the Trustee acting on their behalf), nor the Trustee acting on their behalf, shall be entitled to exercise any right or remedy provided to the Owners, the Parity Debt holders or the Trustee under the Resolution based upon the Issuer’s failure to observe, or refusal to comply with, the above covenant.

The provisions of the foregoing covenants set forth in this Section shall not apply to any Refunding Bonds, including any subseries thereof, which the Issuer determines pursuant to the applicable Certificate of Determination to issue as Taxable Obligations.

**Section 4.02. Defeasance.** In the event the Issuer shall seek, prior to the maturity or redemption date thereof, to pay or cause to be paid, within the meaning and with the effect expressed in the Resolution, all or less than all Outstanding Refunding Bonds issued as Tax-Exempt Obligations and the provisions of Section 4.01 hereof shall then be of any force or effect, then, notwithstanding the provisions of Article A-XI of the Resolution, the Refunding Bonds issued as Tax-Exempt Obligations which the Issuer then seeks to pay or cause to be paid shall not be deemed to have been paid within the meaning and with the effect expressed in Section A-1101 of the Resolution unless (i) the Issuer has confirmed in writing that the Owners of the Refunding Bonds issued as Tax-Exempt Obligations which the Issuer then seeks to pay or cause to be paid will continue, after such action, to have the benefit of a covenant to the effect of the covenant of the Issuer contained in Section 4.01 hereof or (ii) there shall have been delivered to the Trustee an Opinion of Bond Counsel to the effect that non-compliance thereafter with the applicable provisions of the Code will not affect the then current treatment of interest on the Refunding Bonds issued as Tax-Exempt Obligations in determining gross income for Federal income tax purposes.

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**TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY**

**MULTIPLE SERIES  
GENERAL REVENUE REFUNDING BOND  
SUPPLEMENTAL RESOLUTION**

**Adopted December 13, 2017**

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## **TABLE OF CONTENTS**

Page

### **ARTICLE I**

#### **DEFINITIONS AND STATUTORY AUTHORITY**

Section 1.01. Supplemental Resolution .....	1
Section 1.02. Definitions.....	1
Section 1.03. Authority for this Supplemental Resolution .....	2

### **ARTICLE II**

#### **AUTHORIZATION OF REFUNDING BONDS**

Section 2.01. Authorized Principal Amount, Designation and Series .....	3
Section 2.02. Purposes .....	3
Section 2.03. Dates, Maturities, Principal Amounts and Interest .....	3
Section 2.04. Interest Payments .....	4
Section 2.05. Denominations, Numbers and Letters.....	4
Section 2.06. Places of Payment and Paying Agent .....	4
Section 2.07. Sinking Fund Installments .....	4
Section 2.08. Redemption Prices and Terms .....	4
Section 2.09. Delegation to an Authorized Officer.....	5
Section 2.10. Sale of Refunding Bonds .....	7
Section 2.11. Forms of Refunding Bonds and Trustee's Authentication Certificate.....	9
Section 2.12. Appointment of Trustee and Paying Agent .....	9

### **ARTICLE III**

#### **DISPOSITION OF REFUNDING BOND PROCEEDS**

Section 3.01. Disposition of Refunding Bond Proceeds.....	10
---	----

### **ARTICLE**

#### **IV TAX COVENANTS AND DEFEASANCE**

Section 4.01. Tax Covenants Relating to the Refunding Bonds.....	11
Section 4.02. Defeasance .....	11

**MULTIPLE SERIES  
GENERAL REVENUE REFUNDING BOND  
SUPPLEMENTAL RESOLUTION**

BE IT RESOLVED by the Triborough Bridge and Tunnel Authority (the “Issuer”), as follows:

**ARTICLE I**

**DEFINITIONS AND STATUTORY AUTHORITY**

**Section 1.01. Supplemental Resolution.** This resolution is supplemental to, and is adopted in accordance with Article II and Article A-VIII of, a resolution of the Issuer adopted on March 26, 2002, entitled “General Resolution Authorizing General Revenue Obligations” (the “Resolution”).

**Section 1.02. Definitions.**

1. All capitalized terms which are used but not otherwise defined in this Multiple Series General Revenue Refunding Bond Supplemental Resolution (the “Supplemental Resolution”) shall have the same meanings, respectively, as such terms are given by Section 102 of the Resolution.

2. In this Supplemental Resolution:

“Authorized Officer” shall include the officers designated as such in the Resolution, and the Chairman, the Managing Director, the Chair of the Finance Committee, the Vice Chairman, the Chief Financial Officer or the Director, Finance, as well as any officer duly designated as “Acting” in said officer’s capacity, except that, for the purposes of any delegation set forth herein that does not expressly include any Assistant Secretary, “Authorized Officer” shall not include any Assistant Secretary of the Issuer.

“Board” shall mean, when used with respect to the Issuer, the board of the Issuer acting as such pursuant to the provisions of the Issuer Act, and when used with respect to the MTA, the members of the MTA acting as such pursuant to the provisions of the MTA Act.

“Bond Counsel” shall mean Nixon Peabody LLP, Orrick, Herrington & Sutcliffe LLP, D. Seaton and Associates, P.A., P.C., Bryant Rabbino LLP or any other attorney or firm of attorneys of nationally recognized standing in the field of law relating to the issuance of obligations by state and municipal entities, selected by the Issuer.

“Code” shall mean the Internal Revenue Code of 1986, as amended, and regulations thereunder.

“Cross-Credit Obligations” shall mean indebtedness or other obligations issued or incurred by the Issuer or any other Related Entity as described in clause (iii) of the definition of “Capital Costs”, but excluding Obligations.

“Refunding Bonds” shall mean the General Revenue Bonds authorized by Article II of this Supplemental Resolution in one or more Series or subseries.

**Section 1.03. Authority for this Supplemental Resolution.** This Supplemental Resolution is adopted pursuant to the provisions of the Issuer Act and the Resolution.

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## ARTICLE II

### AUTHORIZATION OF REFUNDING BONDS

#### **Section 2.01. Authorized Principal Amount, Designation and Series.**

1. Pursuant to the provisions of the Resolution and in order to issue (a) Refunding Obligations, and (b) Obligations for the purpose of refunding Cross-Credit Obligations, multiple Series of General Revenue Obligations (which may be issued at one time or from time to time in any number of Series or subseries, which for purposes of this Supplemental Resolution shall collectively be referred to herein as the “Refunding Bonds”, subject to redesignation as hereinafter provided) entitled to the benefit, protection and security of such provisions are hereby authorized to be issued in an aggregate principal amount not exceeding the principal amount necessary so that, after giving effect to any net original issue discount or premium and underwriters’ discount from the principal amount, the amount to be deposited in the Proceeds Account pursuant to, or otherwise applied to effectuate the purposes of, Section 2.02 and Section 3.01 of this Supplemental Resolution (exclusive of the amount so deposited therein determined in any Certificate of Determination as estimated to be necessary to pay any Costs of Issuance of the Refunding Bonds payable from such Proceeds Account or otherwise applied to pay such Costs of Issuance), shall not exceed the amount or amounts determined in one or more Certificates of Determination to be necessary to effectuate the purposes set forth in Section 2.02 hereof; provided, however, that any Refunding Bonds issued pursuant to this Supplemental Resolution shall be issued in compliance with any Board policies relating to the issuance of refunding bonds as may be in effect from time to time.

2. Nothing in this Supplemental Resolution is intended to preclude the issuance of Refunding Bonds as refunding obligations in accordance with Section 203 of the Resolution.

Refunding Bonds shall be designated as, and shall be distinguished from the Obligations of all other Series by the title, “General Revenue Bonds, Series [insert calendar year of issuance]” or such other title or titles set forth in the related Certificate of Determination.

The authority to issue Obligations and take related actions granted under previous resolutions of the Issuer shall continue in full force and effect. The authorization to issue the Refunding Bonds and take other related actions hereunder shall continue in effect without any further action by the Issuer until the adoption by the Issuer Board of a subsequent refunding bond supplemental resolution relating to 2019 refundings.

**Section 2.02. Purposes.** The purposes for which the Refunding Bonds are issued shall be set forth in one or more Certificates of Determination and may include the refunding, restructuring or payment, including by purchasing, exchanging or tendering therefor, of all or any portion of any Outstanding Obligations or Parity Debt or Cross-Credit Obligations deemed advisable by an Authorized Officer in accordance with Section 203 or 204 of the Resolution, as applicable.

**Section 2.03. Dates, Maturities, Principal Amounts and Interest.** The Refunding Bonds, except as otherwise provided in the Resolution, shall be dated the date or dates determined

in the related Certificate of Determination. The Refunding Bonds shall mature on the date or dates and in the year or years and principal amount or amounts, and shall bear interest at the rate or rates per annum, if any, specified in or determined in the manner provided in the related Certificate of Determination.

**Section 2.04. Interest Payments.** The Refunding Bonds shall bear interest from their date or dates and be payable on such date or dates as may be determined pursuant to the related Certificate of Determination. Except as otherwise provided in the related Certificate of Determination, interest on the Refunding Bonds shall be computed on the basis of twelve 30-day months and a 360-day year.

**Section 2.05. Denominations, Numbers and Letters.** Unless otherwise provided in the related Certificate of Determination, the Refunding Bonds shall be issued in fully registered form without coupons in the denomination of \$5,000 or any integral multiple thereof.

The Refunding Bonds shall be lettered and numbered as provided in the related Certificate of Determination.

**Section 2.06. Places of Payment and Paying Agent.** Except as otherwise provided in the related Certificate of Determination, principal and Redemption Price of the Refunding Bonds shall be payable to the registered owner of each Refunding Bond when due upon presentation of such Refunding Bond at the principal corporate trust office of the Trustee. Except as otherwise provided in the related Certificate of Determination, interest on the registered Refunding Bonds will be paid by check or draft mailed on the interest payment date by the Paying Agent, to the registered owner at his address as it appears on the registration books or, at the option of any Owner of at least one million dollars (\$1,000,000) in principal amount of the Refunding Bonds, by wire transfer in immediately available funds on each interest payment date to such Owner thereof upon written notice from such Owner to the Trustee, at such address as the Trustee may from time to time notify such Owner, containing the wire transfer address (which shall be in the continental United States) to which such Owner wishes to have such wire directed, if such written notice is received not less than twenty (20) days prior to the related interest payment date (such notice may refer to multiple interest payments).

**Section 2.07. Sinking Fund Installments.** The Refunding Bonds, if any, determined in the related Certificate of Determination shall be subject to redemption (a) in part, by lot, (b) pro rata (in the case of taxable Refunding Bonds), or (c) otherwise as determined in accordance with Section A-404 of the Resolution, as set forth in the Certificate of Determination, on each date in the year or years determined in the Certificate of Determination at the principal amount thereof plus accrued interest up to but not including the date of redemption thereof, from mandatory Sinking Fund Installments which are required to be made in amounts sufficient to redeem on each such date the principal amount of such Refunding Bonds.

**Section 2.08. Redemption Prices and Terms.** The Refunding Bonds may also be subject to redemption prior to maturity, at the option of the Issuer, upon notice as provided in Article A-IV of the Resolution, at any time as a whole or in part (and by lot within a maturity, or otherwise as determined in accordance with Section A-404 of the Resolution, if less than all of a maturity is to be redeemed), from maturities designated by the Issuer on and after the date and in the years and

at the Redemption Prices (expressed as a percentage of principal amount) determined in the related Certificate of Determination, plus accrued interest up to but not including the redemption date. Notwithstanding the foregoing, in the case of taxable Refunding Bonds, if set forth in the Certificate of Determination, the taxable Refunding Bonds may be made subject to pro rata redemption and/or a make-whole redemption premium.

**Section 2.09. Delegation to an Authorized Officer.** 1. There is hereby delegated to each Authorized Officer, subject to the limitations contained in this Supplemental Resolution, the following powers with respect to the Refunding Bonds:

(a) to determine whether and when to issue any Refunding Bonds constituting Refunding Obligations or Obligations issued to refund Cross-Credit Obligations, and to determine the amount of the proceeds of the Refunding Bonds to be applied to refunding purposes as well as the specific Obligations or Parity Debt or Cross-Credit Obligations, or portions of either to be refunded and the date or dates, if any, on which such refunded obligations shall be redeemed, and the amount of the proceeds of the Refunding Bonds estimated to be necessary to pay the Costs of Issuance of the Refunding Bonds;

(b) to determine the purpose or purposes for which the Refunding Bonds are being issued, which shall be one or more of the purposes set forth in Section 2.02 of this Supplemental Resolution;

(c) to determine the principal amounts of the Refunding Bonds to be issued for the purposes set forth in Section 2.02 of this Supplemental Resolution and whether such principal amounts constitute a separate Series or a subseries of Refunding Bonds, and to determine Accreted Values and Appreciated Values, if applicable;

(d) to determine the maturity date and principal amount of each maturity of the Refunding Bonds and the amount and due date of each Sinking Fund Installment, if any;

(e) to determine the date or dates which the Refunding Bonds shall be dated and the interest rate or rates of the Refunding Bonds or the manner of determining such interest rate or rates; provided, however, that any Obligations issued as fixed rate Tax-Exempt Obligations shall be subject to a maximum interest rate of not greater than 10% per annum, any Obligations issued as fixed rate Taxable Obligations shall be subject to a maximum interest rate of not greater than 12% per annum, any Variable Interest Rate Obligations issued as Tax-Exempt Obligations shall be subject to a maximum interest rate of not greater than 15% per annum, any Variable Interest Rate Obligations issued as Taxable Obligations shall be subject to a maximum interest rate of not greater than 18% per annum and any Parity Reimbursement Obligations shall be subject to a maximum interest rate of not greater than 25% per annum, or, in each such case, such higher rate or rates as determined by the Issuer's Board;

(f) to determine the Redemption Price or Redemption Prices, if any, and the redemption terms, if any, for the Refunding Bonds; provided, however, that if the Refunding Bonds are to be redeemable at the election of the Issuer, the Redemption Price (except in the case of taxable Refunding Bonds) shall not be greater than one hundred three percent (103%) of the principal amount of the Refunding Bonds to be redeemed, plus accrued interest thereon up to but

not including the date of redemption and in the case of taxable Refunding Bonds the Redemption Price may be determined pursuant to provisions relating to pro rata redemption and/or make whole redemption;

(g) to determine whether the sale of the Refunding Bonds shall be conducted on either a negotiated or competitive bid basis and, as applicable, to determine the purchase price for the Refunding Bonds to be paid by the purchaser or purchasers referred to in one or more Purchase Agreements or a bank direct purchase agreement, or the purchase price for the Refunding Bonds to be paid by the winning bidder, if such sale is conducted by competitive bid pursuant to a Notice of Sale, in either case as such document is described in Section 2.10 of this Supplemental Resolution, which may include such original issue discount and original issue premium as shall be determined in the related Certificate of Determination; provided, however, that the underwriters' discount reflected in such purchase price shall not exceed \$10.00 for each one thousand dollars (\$1,000) principal amount of the Refunding Bonds;

(h) to take all actions required for the Refunding Bonds to be eligible under the rules and regulations of The Depository Trust Company ("DTC") for investment and trading as uncertificated securities, to execute and deliver a standard form of letter of representation with DTC and, notwithstanding any provisions to the contrary contained in this Supplemental Resolution, to include in the related Certificate of Determination such terms and provisions as may be appropriate or necessary to provide for uncertificated securities in lieu of Refunding Bonds issuable in fully registered form;

(i) to determine whether to issue all or any portion of the Refunding Bonds as Tax-Exempt Obligations, Taxable Obligations, Put Obligations, Variable Interest Rate Obligations or as any other form of Obligations permitted by the Resolution and any matters related thereto, including (i) the terms and provisions of any such Obligations, (ii) the selection of remarketing agents, tender agents, auction agents, dealers, calculation agents, bidding agents or any other agents or parties to ancillary arrangements and the terms of any such arrangements, and (iii) the methods for determining the accrual of Debt Service;

(j) to determine the advisability, as compared to an unenhanced transaction, of obtaining one or more Credit Facilities, to select a provider or providers thereof and to determine and accept the terms and provisions and price thereof, to determine such other matters related thereto as in the opinion of the officer executing the related Certificate of Determination shall be considered necessary or appropriate and to effect such determinations by making any changes in or additions to this Supplemental Resolution required by Credit Facility providers, if any, or required by a Rating Agency in order to attain or maintain specific ratings on the Refunding Bonds, or relating to the mechanisms for the repayment of amounts advanced thereunder or payment of fees, premiums, expenses or any other amounts, notices, the provision of information, and such other matters of a technical, mechanical, procedural or descriptive nature necessary or appropriate to obtain or implement a Credit Facility with respect to the Refunding Bonds, and to make any changes in connection therewith;

(k) to make such changes in or from the form of this Supplemental Resolution as may be required by a Rating Agency in order to attain or maintain specific ratings on the Refunding Bonds;

(l) to make such changes in or from the form of this Supplemental Resolution as may be necessary or desirable in order to cure any ambiguities, inconsistencies or other defects;

(m) to determine whether to (i) enter into an escrow agreement or other arrangement in connection with the issuance of Refunding Bonds, including the selection of escrow agents, verification agents and the manner of determining specified matters relating to the defeasance of the refunded obligations and (ii) purchase SLGs or open market securities and the form and substance thereof and any related investment agreement, and to determine the application of any amounts released in connection with any such refunding;

(n) to determine that such Refunding Bonds comply with all Board policies relating to the issuance of refunding obligations in effect at the time of such determination; and

(o) to determine such other matters specified in or permitted by (i) Sections 202, 203, 204 and A-201 of the Resolution or (ii) this Supplemental Resolution, and to determine matters relating to the payment or defeasance of Obligation Anticipation Notes, including preparation of any documentation therefor.

2. Any Authorized Officer shall execute one or more Certificates of Determination evidencing the determinations made pursuant to this Supplemental Resolution and any such Certificate of Determination shall be conclusive evidence of the determinations of such Authorized Officer, as stated therein. More than one Certificate of Determination may be delivered to the extent more than one Series or subseries of Refunding Bonds are delivered from time to time, or other authority is exercised under this Supplemental Resolution from time to time and each such Certificate of Determination shall be delivered to the Trustee prior to the authentication and delivery of the respective Series or subseries of Refunding Bonds by the Trustee or other documentation. Determinations set forth in any Certificate of Determination shall have the same effect as if set forth in this Supplemental Resolution. Any such Authorized Officer may exercise any authority delegated under this Supplemental Resolution from time to time following issuance of any Refunding Bonds, as appropriate for any purposes, including, in order to change interest rate modes or auction periods, if any Refunding Bonds shall consist of multiple subseries, to change the principal amounts and number of the individual subseries or to combine all subseries into a single Series, if any Refunding Bonds consist of a single Series, to divide such Series into two or more subseries and to determine the principal amount of such subseries, obtain a substitute or additional Credit Facility, enter into a bank direct purchase agreement or similar instrument or to appoint new or additional agents or other parties deemed appropriate to a particular form or mode of Obligation or manner of sale.

**Section 2.10. Sale of Refunding Bonds.** Each Authorized Officer is hereby authorized either (i) to sell and award all or any portion of the Refunding Bonds through a competitive bidding process to purchasers meeting the requirements of one or more Notices of Sale (as hereinafter defined) to be published in order to give notice of the competitive sale of the Refunding Bonds; (ii) to sell and award all or any portion of the Refunding Bonds through a negotiated sale to the purchasers who are referred to in the bond purchase agreement and who shall be selected from the then current list of approved underwriters; or (iii) to sell and award all or any portion of the Refunding Bonds through a direct sale to the financial institution or institutions selected by the Authorized Officer who shall be referred to in the continuing covenant, direct purchase or similar



agreement. Each Authorized Officer is hereby authorized to sell and award the Refunding Bonds to the purchasers referred to in the preceding sentence in the case of a bond purchase agreement, in substantially the form most recently executed or delivered by the Issuer in connection with the sale of Obligations, or, with respect to a continuing covenant, direct purchase or similar agreement, containing bank facility terms and provisions (including, without limitation, increased costs, term-out, events of default and remedies) in substantially the form set forth in a letter of credit reimbursement agreement most recently executed or delivered by the Issuer, including, if applicable, that the direct purchaser offer to the Issuer a term-out provision of no less than five years, with such revisions to reflect the terms and provisions of the Refunding Bonds as may be approved by the officer executing the bond purchase, continuing covenant or similar agreement (each, a "Purchase Agreement"). Each Authorized Officer is hereby authorized to agree to the selection of the representative of the underwriters or the other purchasers or facility providers as referred to in the Purchase Agreement or Agreements and to execute and deliver the Purchase Agreement or Agreements for and on behalf and in the name of the Issuer with such changes, omissions, insertions and revisions as may be approved by the officer executing the Purchase Agreement or Agreements, said execution being conclusive evidence of such approval and concurrence in the selection of the representative of the underwriters.

If it is determined that any sale of Bonds shall be conducted on a competitive bid basis, each Authorized Officer is hereby further authorized to conduct the sale and award of the Refunding Bonds on the basis of a competitive bid, pursuant to the terms of a notice of sale, including bid form (the "Notice of Sale"), in a form, including any limitations on permitted bidders and a description of the basis for determining the winning bidder or bidders, determined by such Authorized Officer. Each Authorized Officer is hereby authorized to conduct such competitive sale of the Refunding Bonds in a manner consistent with this Supplemental Resolution and to utilize the services of the Authority's financial advisor and the services of an electronic bidding service, as such Authorized Officer shall determine, and the execution by such Authorized Officer of a letter of award shall be conclusive evidence of such award.

Each Authorized Officer is hereby authorized to make public and to authorize the use and distribution by said purchasers or other appropriate parties of a preliminary official statement, offering circular, or other disclosure document (the "Preliminary Official Statement") in connection with each public offering or any private placement of the Refunding Bonds, in substantially the form most recently executed or delivered by the Issuer in connection with the sale of Obligations, with such changes, omissions, insertions and revisions as such officer shall deem advisable. The Issuer authorizes any of said officers to deliver a certification to the effect that such Preliminary Official Statement or Official Statement, if deemed necessary or appropriate, together with such other documents, if any, described in such certificate, was deemed final as of its date for purposes of Rule 15c2-12 of the Securities and Exchange Commission as applicable.

Each Authorized Officer is hereby authorized to make public and to authorize distribution of a final Official Statement in substantially the form of each Preliminary Official Statement or the most recently executed and delivered Official Statement if there is not a Preliminary Official Statement, with such changes, omissions, insertions and revisions as such officer shall deem advisable, to sign such Official Statement and to deliver such Official Statement to the purchasers of such issue of the Refunding Bonds, such execution being conclusive evidence of the approval of such changes, omissions, insertions and revisions.

Each Authorized Officer is hereby authorized to execute and deliver for and on behalf and in the name of the Issuer, to the extent determined by such Authorized Officer to be necessary or convenient, a Continuing Disclosure Agreement, substantially in the form appended to the Purchase Agreement or Notice of Sale, with such changes, omissions, insertions and revisions as such officer shall deem advisable (the “Continuing Disclosure Agreement”), said execution being conclusive evidence of the approval of such changes, omissions, insertions and revisions.

The proceeds of each good faith check, if any, received by the Issuer from the purchasers of each issue of Refunding Bonds under the terms of the related Purchase Agreement or Notice of Sale may be invested by the Issuer pending application of the proceeds of such good faith check for the purposes provided in Section 2.02 of this Supplemental Resolution at the time of the issuance and delivery of such Refunding Bonds.

Each Authorized Officer (including any Assistant Secretary of the Issuer) is hereby authorized and directed to execute, deliver, amend, replace or terminate any and all documents and instruments (including any remarketing agreements, dealer agreements, broker-dealer agreements, tender agent agreements, or auction agency agreements, any escrow agreements, any investment agreements or arrangements, or any reimbursement agreements or documents or instruments relating to a Credit Facility deemed appropriate to a given form or mode of an Obligation) and to do and cause to be done any and all acts necessary or proper for carrying out each Purchase Agreement or Notice of Sale, each Continuing Disclosure Agreement, the terms of any Credit Facility or other such agreement or arrangement, and the issuance, sale and delivery of each issue of the Refunding Bonds and for implementing the terms of each issue of the Refunding Bonds and the transactions contemplated hereby or thereby.

When reference is made in this Supplemental Resolution to the authorization of an Authorized Officer to do any act, such act may be accomplished by any of such officers individually.

**Section 2.11. Forms of Refunding Bonds and Trustee’s Authentication Certificate.** Subject to the provisions of the Resolution, the form of registered Refunding Bonds, and the Trustee’s certificate of authentication, shall be substantially in the form set forth in Exhibit One to the Resolution including, if necessary, any changes to comply with the requirements of DTC or the provisions of this Supplemental Resolution or any Certificate of Determination.

**Section 2.12. Appointment of Trustee and Paying Agent.** Unless otherwise provided by Certificate of Determination, U.S. Bank Trust National Association shall be the Trustee under the Resolution and the Paying Agent for the Refunding Bonds.

## ARTICLE III

### DISPOSITION OF REFUNDING BOND PROCEEDS

**Section 3.01. Disposition of Refunding Bond Proceeds.** Any proceeds of the sale of the Refunding Bonds, other than accrued interest, if any, shall be deposited, simultaneously with the issuance and delivery of the Refunding Bonds, at one time or from time to time in one or more Series or subseries, in the Proceeds Account which is deemed to be established for each Series in the Proceeds Fund to be applied, or shall otherwise be applied pursuant to a Certificate of Determination to:

(a) the refunding of any Obligations, Parity Debt or Cross-Credit Obligations, or portions of any of them, in accordance with Section 2.02 hereof; and

(b) the balance of such proceeds, exclusive of accrued interest, shall be deposited in the COI Account and applied to the payment of Costs of Issuance or otherwise applied to the payment of Costs of Issuance.

Unless otherwise provided in a Certificate of Determination, the accrued interest, if any, and any capitalized interest, received on the sale of the Refunding Bonds shall be deposited in the Debt Service Fund.

## ARTICLE IV

### TAX COVENANTS AND DEFEASANCE

**Section 4.01. Tax Covenants Relating to the Refunding Bonds.** The Issuer covenants that, in order to maintain the exclusion from gross income for Federal income tax purposes of the interest on the Refunding Bonds issued as Tax-Exempt Obligations, the Issuer will satisfy, or take such actions as are necessary to cause to be satisfied, each provision of the Code necessary to maintain such exclusion. In furtherance of this covenant, the Issuer agrees to comply with such written instructions as may be provided by Bond Counsel. In furtherance of the covenant contained in the preceding sentence, the Issuer agrees to continually comply with the provisions of any “Arbitrage and Use of Proceeds Certificate” or “Tax Certificate” to be executed by the Issuer in connection with the execution and delivery of any Refunding Bonds issued as Tax-Exempt Obligations, as amended from time to time.

Notwithstanding any other provision of the Resolution to the contrary, upon the Issuer’s failure to observe, or refusal to comply with, the above covenant (a) the Owners of the Refunding Bonds, or the Trustee acting on their behalf, shall be entitled to the rights and remedies provided to Owners or the Trustee under Section 702 of the Resolution, other than the right (which is hereby abrogated solely as to the Issuer’s failure to observe, or refusal to comply with the above covenant) to declare the principal of all Obligations then Outstanding, and the interest accrued thereon, to be due and payable pursuant to Section 567 of the Issuer Act, and (b) neither the Owners of the Obligations of any Series or holders of any Parity Debt (other than the Refunding Bonds or the Trustee acting on their behalf), nor the Trustee acting on their behalf, shall be entitled to exercise any right or remedy provided to the Owners, the Parity Debt holders or the Trustee under the Resolution based upon the Issuer’s failure to observe, or refusal to comply with, the above covenant.

The provisions of the foregoing covenants set forth in this Section shall not apply to any Refunding Bonds, including any subseries thereof, which the Issuer determines pursuant to the applicable Certificate of Determination to issue as Taxable Obligations.

**Section 4.02. Defeasance.** In the event the Issuer shall seek, prior to the maturity or redemption date thereof, to pay or cause to be paid, within the meaning and with the effect expressed in the Resolution, all or less than all Outstanding Refunding Bonds issued as Tax-Exempt Obligations and the provisions of Section 4.01 hereof shall then be of any force or effect, then, notwithstanding the provisions of Article A-XI of the Resolution, the Refunding Bonds issued as Tax-Exempt Obligations which the Issuer then seeks to pay or cause to be paid shall not be deemed to have been paid within the meaning and with the effect expressed in Section A-1101 of the Resolution unless (i) the Issuer has confirmed in writing that the Owners of the Refunding Bonds issued as Tax-Exempt Obligations which the Issuer then seeks to pay or cause to be paid will continue, after such action, to have the benefit of a covenant to the effect of the covenant of the Issuer contained in Section 4.01 hereof or (ii) there shall have been delivered to the Trustee an Opinion of Bond Counsel to the effect that non-compliance thereafter with the applicable provisions of the Code will not affect the then current treatment of interest on the Refunding Bonds issued as Tax-Exempt Obligations in determining gross income for Federal income tax purposes.

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**TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY**

**MULTIPLE SERIES  
2001 SUBORDINATE REVENUE REFUNDING BOND  
SUPPLEMENTAL RESOLUTION**

**Adopted December 13, 2017**

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## **TABLE OF CONTENTS**

Page

### **ARTICLE I**

#### **DEFINITIONS AND STATUTORY AUTHORITY**

Section 1.01. Supplemental Resolution .....	1
Section 1.02. Definitions.....	1
Section 1.03. Authority for this Supplemental Resolution .....	2

### **ARTICLE II**

#### **AUTHORIZATION OF REFUNDING BONDS**

Section 2.01. Authorized Principal Amount, Designation and Series .....	3
Section 2.02. Purposes .....	3
Section 2.03. Dates, Maturities, Principal Amounts and Interest .....	3
Section 2.04. Interest Payments .....	4
Section 2.05. Denominations, Numbers and Letters.....	4
Section 2.06. Places of Payment and Paying Agent .....	4
Section 2.07. Sinking Fund Installments .....	4
Section 2.08. Redemption Prices and Terms .....	4
Section 2.09. Delegation to an Authorized Officer.....	5
Section 2.10. Sale of Refunding Bonds .....	7
Section 2.11. Forms of Refunding Bonds and Trustee's Authentication Certificate.....	9
Section 2.12. Appointment of Trustee and Paying Agent .....	9

### **ARTICLE III**

#### **DISPOSITION OF REFUNDING BOND PROCEEDS**

Section 3.01. Disposition of Refunding Bond Proceeds.....	10
---	----

### **ARTICLE IV**

#### **TAX COVENANTS, ADDITIONAL COVENANTS AND DEFEASANCE**

Section 4.01. Tax Covenants Relating to the Refunding Bonds.....	11
Section 4.02. Additional Covenants.....	11
Section 4.03. Defeasance .....	12

**MULTIPLE SERIES  
2001 SUBORDINATE REVENUE REFUNDING BOND  
SUPPLEMENTAL RESOLUTION**

BE IT RESOLVED by the Triborough Bridge and Tunnel Authority (the “Issuer”), as follows:

**ARTICLE I**

**DEFINITIONS AND STATUTORY AUTHORITY**

**Section 1.01. Supplemental Resolution.** This resolution is supplemental to, and is adopted in accordance with Article II and Article A-VIII of, a resolution of the Issuer adopted on March 26, 2002, entitled “2001 Subordinate Resolution Authorizing General Revenue Obligations” (the “Resolution”).

**Section 1.02. Definitions.**

1. All capitalized terms which are used but not otherwise defined in this Multiple Series 2001 Subordinate Revenue Refunding Bond Supplemental Resolution (the “Supplemental Resolution”) shall have the same meanings, respectively, as such terms are given by Section 102 of the Resolution.

2. In this Supplemental Resolution:

“Authorized Officer” shall include the officers designated as such in the Resolution, and the Chairman, the Managing Director, the Chair of the Finance Committee, the Vice Chairman, the Chief Financial Officer or the Director, Finance, as well as any officer duly designated as “Acting” in said officer’s capacity, except that, for the purposes of any delegation set forth herein that does not expressly include any Assistant Secretary, “Authorized Officer” shall not include any Assistant Secretary of the Issuer.

“Board” shall mean, when used with respect to the Issuer, the board of the Issuer acting as such pursuant to the provisions of the Issuer Act, and when used with respect to the MTA, the members of the MTA acting as such pursuant to the provisions of the MTA Act.

“Bond Counsel” shall mean Nixon Peabody LLP, Orrick, Herrington & Sutcliffe LLP, D. Seaton and Associates, P.A., P.C., Bryant Rabbino LLP or any other attorney or firm of attorneys of nationally recognized standing in the field of law relating to the issuance of obligations by state and municipal entities, selected by the Issuer.

“Code” shall mean the Internal Revenue Code of 1986, as amended, and regulations thereunder.

“Cross-Credit Obligations” shall mean indebtedness or other obligations issued or incurred by the Issuer or any other Related Entity as described in clause (iii) of the definition of “Capital Costs”, but excluding Obligations.

“Refunding Bonds” shall mean the 2001 Subordinate Revenue Bonds authorized by Article II of this Supplemental Resolution in one or more Series or subseries.

**Section 1.03. Authority for this Supplemental Resolution.** This Supplemental Resolution is adopted pursuant to the provisions of the Issuer Act and the Resolution.

*[Remainder of page intentionally left blank]*



## ARTICLE II

### AUTHORIZATION OF REFUNDING BONDS

#### **Section 2.01. Authorized Principal Amount, Designation and Series.**

1. Pursuant to the provisions of the Resolution and in order to issue (a) Refunding Subordinate Obligations, and (b) Obligations for the purpose of refunding Cross-Credit Obligations, multiple Series of Subordinate Revenue Obligations (which may be issued at one time or from time to time in any number of Series or subseries, which for purposes of this Supplemental Resolution shall collectively be referred to herein as the “Refunding Bonds”, subject to redesignation as hereinafter provided) entitled to the benefit, protection and security of such provisions are hereby authorized to be issued in an aggregate principal amount not exceeding the principal amount necessary so that, after giving effect to any net original issue discount or premium and underwriters’ discount from the principal amount, the amount to be deposited in the Proceeds Account pursuant to, or otherwise applied to effectuate the purposes of, Section 2.02 and Section 3.01 of this Supplemental Resolution (exclusive of the amount so deposited therein determined in any Certificate of Determination as estimated to be necessary to pay any Costs of Issuance of the Refunding Bonds payable from such Proceeds Account or otherwise applied to pay such Costs of Issuance), shall not exceed the amount or amounts determined in one or more Certificates of Determination to be necessary to effectuate the purposes set forth in Section 2.02 hereof; provided, however, that any Refunding Bonds issued pursuant to this Supplemental Resolution shall be issued in compliance with any Board policies relating to the issuance of refunding bonds as may be in effect from time to time.

2. Nothing in this Supplemental Resolution is intended to preclude the issuance of Refunding Bonds as refunding obligations in accordance with Section 203 of the Resolution.

Refunding Bonds shall be designated as, and shall be distinguished from the Obligations of all other Series by the title, “Subordinate Revenue Bonds, Series [insert calendar year of issuance]” or such other title or titles set forth in the related Certificate of Determination.

The authority to issue Obligations and take related actions granted under previous resolutions of the Issuer shall continue in full force and effect. The authorization to issue the Refunding Bonds and take other related actions hereunder shall continue in effect without any further action by the Issuer until the adoption by the Issuer Board of a subsequent refunding bond supplemental resolution relating to 2019 refundings.

**Section 2.02. Purposes.** The purposes for which the Refunding Bonds are issued shall be set forth in one or more Certificates of Determination and may include the refunding, restructuring or payment, including by purchasing, exchanging or tendering therefor, of all or any portion of any Outstanding Obligations or Parity Debt or Cross-Credit Obligations deemed advisable by an Authorized Officer in accordance with Section 203 or 204 of the Resolution, as applicable.

**Section 2.03. Dates, Maturities, Principal Amounts and Interest.** The Refunding Bonds, except as otherwise provided in the Resolution, shall be dated the date or dates determined

in the related Certificate of Determination. The Refunding Bonds shall mature on the date or dates and in the year or years and principal amount or amounts, and shall bear interest at the rate or rates per annum, if any, specified in or determined in the manner provided in the related Certificate of Determination.

**Section 2.04. Interest Payments.** The Refunding Bonds shall bear interest from their date or dates and be payable on such date or dates as may be determined pursuant to the related Certificate of Determination. Except as otherwise provided in the related Certificate of Determination, interest on the Refunding Bonds shall be computed on the basis of twelve 30-day months and a 360-day year.

**Section 2.05. Denominations, Numbers and Letters.** Unless otherwise provided in the related Certificate of Determination, the Refunding Bonds shall be issued in fully registered form without coupons in the denomination of \$5,000 or any integral multiple thereof.

The Refunding Bonds shall be lettered and numbered as provided in the related Certificate of Determination.

**Section 2.06. Places of Payment and Paying Agent.** Except as otherwise provided in the related Certificate of Determination, principal and Redemption Price of the Refunding Bonds shall be payable to the registered owner of each Refunding Bond when due upon presentation of such Refunding Bond at the principal corporate trust office of the Trustee. Except as otherwise provided in the related Certificate of Determination, interest on the registered Refunding Bonds will be paid by check or draft mailed on the interest payment date by the Paying Agent, to the registered owner at his address as it appears on the registration books or, at the option of any Owner of at least one million dollars (\$1,000,000) in principal amount of the Refunding Bonds, by wire transfer in immediately available funds on each interest payment date to such Owner thereof upon written notice from such Owner to the Trustee, at such address as the Trustee may from time to time notify such Owner, containing the wire transfer address (which shall be in the continental United States) to which such Owner wishes to have such wire directed, if such written notice is received not less than twenty (20) days prior to the related interest payment date (such notice may refer to multiple interest payments).

**Section 2.07. Sinking Fund Installments.** The Refunding Bonds, if any, determined in the related Certificate of Determination shall be subject to redemption (a) in part, by lot, (b) pro rata (in the case of taxable Refunding Bonds), or (c) otherwise as determined in accordance with Section A-404 of the Resolution, as set forth in the Certificate of Determination, on each date in the year or years determined in the Certificate of Determination at the principal amount thereof plus accrued interest up to but not including the date of redemption thereof, from mandatory Sinking Fund Installments which are required to be made in amounts sufficient to redeem on each such date the principal amount of such Refunding Bonds.

**Section 2.08. Redemption Prices and Terms.** The Refunding Bonds may also be subject to redemption prior to maturity, at the option of the Issuer, upon notice as provided in Article A-IV of the Resolution, at any time as a whole or in part (and by lot within a maturity, or otherwise as determined in accordance with Section A-404 of the Resolution, if less than all of a maturity is to be redeemed), from maturities designated by the Issuer on and after the date and in the years and

at the Redemption Prices (expressed as a percentage of principal amount) determined in the related Certificate of Determination, plus accrued interest up to but not including the redemption date. Notwithstanding the foregoing, in the case of taxable Refunding Bonds, if set forth in the Certificate of Determination, the taxable Refunding Bonds may be made subject to pro rata redemption and/or a make-whole redemption premium.

**Section 2.09. Delegation to an Authorized Officer.** 1. There is hereby delegated to each Authorized Officer, subject to the limitations contained in this Supplemental Resolution, the following powers with respect to the Refunding Bonds:

(a) to determine whether and when to issue any Refunding Bonds constituting Refunding Subordinate Obligations or Obligations issued to refund Cross-Credit Obligations, and to determine the amount of the proceeds of the Refunding Bonds to be applied to refunding purposes as well as the specific Obligations or Parity Debt or Cross-Credit Obligations, or portions of either to be refunded and the date or dates, if any, on which such refunded obligations shall be redeemed, and the amount of the proceeds of the Refunding Bonds estimated to be necessary to pay the Costs of Issuance of the Refunding Bonds;

(b) to determine the purpose or purposes for which the Refunding Bonds are being issued, which shall be one or more of the purposes set forth in Section 2.02 of this Supplemental Resolution;

(c) to determine the principal amounts of the Refunding Bonds to be issued for the purposes set forth in Section 2.02 of this Supplemental Resolution and whether such principal amounts constitute a separate Series or a subseries of Refunding Bonds, and to determine Accreted Values and Appreciated Values, if applicable;

(d) to determine the maturity date and principal amount of each maturity of the Refunding Bonds and the amount and due date of each Sinking Fund Installment, if any;

(e) to determine the date or dates which the Refunding Bonds shall be dated and the interest rate or rates of the Refunding Bonds or the manner of determining such interest rate or rates; provided, however, that any Obligations issued as fixed rate Tax-Exempt Obligations shall be subject to a maximum interest rate of not greater than 10% per annum, any Obligations issued as fixed rate Taxable Obligations shall be subject to a maximum interest rate of not greater than 12% per annum, any Variable Interest Rate Obligations issued as Tax-Exempt Obligations shall be subject to a maximum interest rate of not greater than 15% per annum, any Variable Interest Rate Obligations issued as Taxable Obligations shall be subject to a maximum interest rate of not greater than 18% per annum and any Parity Reimbursement Obligations shall be subject to a maximum interest rate of not greater than 25% per annum, or, in each such case, such higher rate or rates as determined by the Issuer's Board;

(f) to determine the Redemption Price or Redemption Prices, if any, and the redemption terms, if any, for the Refunding Bonds; provided, however, that if the Refunding Bonds are to be redeemable at the election of the Issuer, the Redemption Price (except in the case of taxable Refunding Bonds) shall not be greater than one hundred three percent (103%) of the principal amount of the Refunding Bonds to be redeemed, plus accrued interest thereon up to but

not including the date of redemption and in the case of taxable Refunding Bonds the Redemption Price may be determined pursuant to provisions relating to pro rata redemption and/or make whole redemption;

(g) to determine whether the sale of the Refunding Bonds shall be conducted on either a negotiated or competitive bid basis and, as applicable, to determine the purchase price for the Refunding Bonds to be paid by the purchaser or purchasers referred to in one or more Purchase Agreements or a bank direct purchase agreement, or the purchase price for the Refunding Bonds to be paid by the winning bidder, if such sale is conducted by competitive bid pursuant to a Notice of Sale, in either case as such document is described in Section 2.10 of this Supplemental Resolution, which may include such original issue discount and original issue premium as shall be determined in the related Certificate of Determination; provided, however, that the underwriters' discount reflected in such purchase price shall not exceed \$10.00 for each one thousand dollars (\$1,000) principal amount of the Refunding Bonds;

(h) to take all actions required for the Refunding Bonds to be eligible under the rules and regulations of The Depository Trust Company ("DTC") for investment and trading as uncertificated securities, to execute and deliver a standard form of letter of representation with DTC and, notwithstanding any provisions to the contrary contained in this Supplemental Resolution, to include in the related Certificate of Determination such terms and provisions as may be appropriate or necessary to provide for uncertificated securities in lieu of Refunding Bonds issuable in fully registered form;

(i) to determine whether to issue all or any portion of the Refunding Bonds as Tax-Exempt Obligations, Taxable Obligations, Put Obligations, Variable Interest Rate Obligations or as any other form of Obligations permitted by the Resolution and any matters related thereto, including (i) the terms and provisions of any such Obligations, (ii) the selection of remarketing agents, tender agents, auction agents, dealers, calculation agents, bidding agents or any other agents or parties to ancillary arrangements and the terms of any such arrangements, and (iii) the methods for determining the accrual of Debt Service;

(j) to determine the advisability, as compared to an unenhanced transaction, of obtaining one or more Credit Facilities, to select a provider or providers thereof and to determine and accept the terms and provisions and price thereof, to determine such other matters related thereto as in the opinion of the officer executing the related Certificate of Determination shall be considered necessary or appropriate and to effect such determinations by making any changes in or additions to this Supplemental Resolution required by Credit Facility providers, if any, or required by a Rating Agency in order to attain or maintain specific ratings on the Refunding Bonds, or relating to the mechanisms for the repayment of amounts advanced thereunder or payment of fees, premiums, expenses or any other amounts, notices, the provision of information, and such other matters of a technical, mechanical, procedural or descriptive nature necessary or appropriate to obtain or implement a Credit Facility with respect to the Refunding Bonds, and to make any changes in connection therewith;

(k) to make such changes in or from the form of this Supplemental Resolution as may be required by a Rating Agency in order to attain or maintain specific ratings on the Refunding Bonds;

(l) to make such changes in or from the form of this Supplemental Resolution as may be necessary or desirable in order to cure any ambiguities, inconsistencies or other defects;

(m) to determine whether to (i) enter into an escrow agreement or other arrangement in connection with the issuance of Refunding Bonds, including the selection of escrow agents, verification agents and the manner of determining specified matters relating to the defeasance of the refunded obligations and (ii) purchase SLGs or open market securities and the form and substance thereof and any related investment agreement, and to determine the application of any amounts released in connection with any such refunding;

(n) to determine that such Refunding Bonds comply with all Board policies relating to the issuance of refunding obligations in effect at the time of such determination; and

(o) to determine such other matters specified in or permitted by (i) Sections 202, 203, 204 and A-201 of the Resolution or (ii) this Supplemental Resolution, and to determine matters relating to the payment or defeasance of Obligation Anticipation Notes, including preparation of any documentation therefor.

2. Any Authorized Officer shall execute one or more Certificates of Determination evidencing the determinations made pursuant to this Supplemental Resolution and any such Certificate of Determination shall be conclusive evidence of the determinations of such Authorized Officer, as stated therein. More than one Certificate of Determination may be delivered to the extent more than one Series or subseries of Refunding Bonds are delivered from time to time, or other authority is exercised under this Supplemental Resolution from time to time and each such Certificate of Determination shall be delivered to the Trustee prior to the authentication and delivery of the respective Series or subseries of Refunding Bonds by the Trustee or other documentation. Determinations set forth in any Certificate of Determination shall have the same effect as if set forth in this Supplemental Resolution. Any such Authorized Officer may exercise any authority delegated under this Supplemental Resolution from time to time following issuance of any Refunding Bonds, as appropriate for any purposes, including, in order to change interest rate modes or auction periods, if any Refunding Bonds shall consist of multiple subseries, to change the principal amounts and number of the individual subseries or to combine all subseries into a single Series, if any Refunding Bonds consist of a single Series, to divide such Series into two or more subseries and to determine the principal amount of such subseries, obtain a substitute or additional Credit Facility, enter into a bank direct purchase agreement or similar instrument or to appoint new or additional agents or other parties deemed appropriate to a particular form or mode of Obligation or manner of sale.

**Section 2.10. Sale of Refunding Bonds.** Each Authorized Officer is hereby authorized either (i) to sell and award all or any portion of the Refunding Bonds through a competitive bidding process to purchasers meeting the requirements of one or more Notices of Sale (as hereinafter defined) to be published in order to give notice of the competitive sale of the Refunding Bonds; (ii) to sell and award all or any portion of the Refunding Bonds through a negotiated sale to the purchasers who are referred to in the bond purchase agreement and who shall be selected from the then current list of approved underwriters; or (iii) to sell and award all or any portion of the Refunding Bonds through a direct sale to the financial institution or institutions selected by the Authorized Officer who shall be referred to in the continuing covenant, direct purchase or similar

agreement. Each Authorized Officer is hereby authorized to sell and award the Refunding Bonds to the purchasers referred to in the preceding sentence in the case of a bond purchase agreement, in substantially the form most recently executed or delivered by the Issuer in connection with the sale of Obligations, or, with respect to a continuing covenant, direct purchase or similar agreement, containing bank facility terms and provisions (including, without limitation, increased costs, term-out, events of default and remedies) in substantially the form set forth in a letter of credit reimbursement agreement most recently executed or delivered by the Issuer, including, if applicable, that the direct purchaser offer to the Issuer a term-out provision of no less than five years, with such revisions to reflect the terms and provisions of the Refunding Bonds as may be approved by the officer executing the bond purchase, continuing covenant or similar agreement (each, a "Purchase Agreement"). Each Authorized Officer is hereby authorized to agree to the selection of the representative of the underwriters or the other purchasers or facility providers as referred to in the Purchase Agreement or Agreements and to execute and deliver the Purchase Agreement or Agreements for and on behalf and in the name of the Issuer with such changes, omissions, insertions and revisions as may be approved by the officer executing the Purchase Agreement or Agreements, said execution being conclusive evidence of such approval and concurrence in the selection of the representative of the underwriters.

If it is determined that any sale of Bonds shall be conducted on a competitive bid basis, each Authorized Officer is hereby further authorized to conduct the sale and award of the Refunding Bonds on the basis of a competitive bid, pursuant to the terms of a notice of sale, including bid form (the "Notice of Sale"), in a form, including any limitations on permitted bidders and a description of the basis for determining the winning bidder or bidders, determined by such Authorized Officer. Each Authorized Officer is hereby authorized to conduct such competitive sale of the Refunding Bonds in a manner consistent with this Supplemental Resolution and to utilize the services of the Authority's financial advisor and the services of an electronic bidding service, as such Authorized Officer shall determine, and the execution by such Authorized Officer of a letter of award shall be conclusive evidence of such award.

Each Authorized Officer is hereby authorized to make public and to authorize the use and distribution by said purchasers or other appropriate parties of a preliminary official statement, offering circular, or other disclosure document (the "Preliminary Official Statement") in connection with each public offering or any private placement of the Refunding Bonds, in substantially the form most recently executed or delivered by the Issuer in connection with the sale of Obligations, with such changes, omissions, insertions and revisions as such officer shall deem advisable. The Issuer authorizes any of said officers to deliver a certification to the effect that such Preliminary Official Statement or Official Statement, if deemed necessary or appropriate, together with such other documents, if any, described in such certificate, was deemed final as of its date for purposes of Rule 15c2-12 of the Securities and Exchange Commission as applicable.

Each Authorized Officer is hereby authorized to make public and to authorize distribution of a final Official Statement in substantially the form of each Preliminary Official Statement or the most recently executed and delivered Official Statement if there is not a Preliminary Official Statement, with such changes, omissions, insertions and revisions as such officer shall deem advisable, to sign such Official Statement and to deliver such Official Statement to the purchasers of such issue of the Refunding Bonds, such execution being conclusive evidence of the approval of such changes, omissions, insertions and revisions.

Each Authorized Officer is hereby authorized to execute and deliver for and on behalf and in the name of the Issuer, to the extent determined by such Authorized Officer to be necessary or convenient, a Continuing Disclosure Agreement, substantially in the form appended to the Purchase Agreement or Notice of Sale, with such changes, omissions, insertions and revisions as such officer shall deem advisable (the "Continuing Disclosure Agreement"), said execution being conclusive evidence of the approval of such changes, omissions, insertions and revisions.

The proceeds of each good faith check, if any, received by the Issuer from the purchasers of each issue of Refunding Bonds under the terms of the related Purchase Agreement or Notice of Sale may be invested by the Issuer pending application of the proceeds of such good faith check for the purposes provided in Section 2.02 of this Supplemental Resolution at the time of the issuance and delivery of such Refunding Bonds.

Each Authorized Officer (including any Assistant Secretary of the Issuer) is hereby authorized and directed to execute, deliver, amend, replace or terminate any and all documents and instruments (including any remarketing agreements, dealer agreements, broker-dealer agreements, tender agent agreements, or auction agency agreements, any escrow agreements, any investment agreements or arrangements, or any reimbursement agreements or documents or instruments relating to a Credit Facility deemed appropriate to a given form or mode of an Obligation) and to do and cause to be done any and all acts necessary or proper for carrying out each Purchase Agreement or Notice of Sale, each Continuing Disclosure Agreement, the terms of any Credit Facility or other such agreement or arrangement, and the issuance, sale and delivery of each issue of the Refunding Bonds and for implementing the terms of each issue of the Refunding Bonds and the transactions contemplated hereby or thereby.

When reference is made in this Supplemental Resolution to the authorization of an Authorized Officer to do any act, such act may be accomplished by any of such officers individually.

**Section 2.11. Forms of Refunding Bonds and Trustee's Authentication Certificate.** Subject to the provisions of the Resolution, the form of registered Refunding Bonds, and the Trustee's certificate of authentication, shall be substantially in the form set forth in Exhibit One to the Resolution including, if necessary, any changes to comply with the requirements of DTC or the provisions of this Supplemental Resolution or any Certificate of Determination.

**Section 2.12. Appointment of Trustee and Paying Agent.** Unless otherwise provided by Certificate of Determination, The Bank of New York Mellon shall be the Trustee under the Resolution and the Paying Agent for the Refunding Bonds.

## ARTICLE III

### DISPOSITION OF REFUNDING BOND PROCEEDS

**Section 3.01. Disposition of Refunding Bond Proceeds.** Any proceeds of the sale of the Refunding Bonds, other than accrued interest, if any, shall be deposited, simultaneously with the issuance and delivery of the Refunding Bonds, at one time or from time to time in one or more Series or subseries, in the Proceeds Account which is deemed to be established for each Series in the Proceeds Fund to be applied, or shall otherwise be applied pursuant to a Certificate of Determination to:

(a) the refunding of any Obligations, Parity Debt or Cross-Credit Obligations, or portions of any of them, in accordance with Section 2.02 hereof; and

(b) the balance of such proceeds, exclusive of accrued interest, shall be deposited in the COI Account and applied to the payment of Costs of Issuance or otherwise applied to the payment of Costs of Issuance.

Unless otherwise provided in a Certificate of Determination, the accrued interest, if any, and any capitalized interest, received on the sale of the Refunding Bonds shall be deposited in the Debt Service Fund.



## ARTICLE IV

### TAX COVENANTS, ADDITIONAL COVENANTS AND DEFEASANCE

**Section 4.01. Tax Covenants Relating to the Refunding Bonds.** The Issuer covenants that, in order to maintain the exclusion from gross income for Federal income tax purposes of the interest on the Refunding Bonds issued as Tax-Exempt Obligations, the Issuer will satisfy, or take such actions as are necessary to cause to be satisfied, each provision of the Code necessary to maintain such exclusion. In furtherance of this covenant, the Issuer agrees to comply with such written instructions as may be provided by Bond Counsel. In furtherance of the covenant contained in the preceding sentence, the Issuer agrees to continually comply with the provisions of any “Arbitrage and Use of Proceeds Certificate” or “Tax Certificate” to be executed by the Issuer in connection with the execution and delivery of any Refunding Bonds issued as Tax-Exempt Obligations, as amended from time to time.

Notwithstanding any other provision of the Resolution to the contrary, upon the Issuer’s failure to observe, or refusal to comply with, the above covenant (a) the Owners of the Refunding Bonds, or the Trustee acting on their behalf, shall be entitled to the rights and remedies provided to Owners or the Trustee under Section 702 of the Resolution, other than the right (which is hereby abrogated solely as to the Issuer’s failure to observe, or refusal to comply with the above covenant) to declare the principal of all Obligations then Outstanding, and the interest accrued thereon, to be due and payable pursuant to Section 567 of the Issuer Act, and (b) neither the Owners of the Obligations of any Series or holders of any Parity Debt (other than the Refunding Bonds or the Trustee acting on their behalf), nor the Trustee acting on their behalf, shall be entitled to exercise any right or remedy provided to the Owners, the Parity Debt holders or the Trustee under the Resolution based upon the Issuer’s failure to observe, or refusal to comply with, the above covenant.

The provisions of the foregoing covenants set forth in this Section shall not apply to any Refunding Bonds, including any subseries thereof, which the Issuer determines pursuant to the applicable Certificate of Determination to issue as Taxable Obligations.

### **Section 4.02. Additional Covenants.**

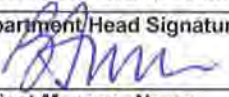

1. The Issuer covenants and agrees that it will not issue any Senior Obligations under the Senior Resolution (other than pursuant to Section 205 thereof) unless in addition to satisfying the requirements of the Senior Resolution, an Authorized Officer delivers to the trustee under the Senior Resolution a certificate demonstrating that for any period of 12 consecutive calendar months out of the 18 complete calendar months next preceding the date of authentication and delivery such issue of Senior Obligations, Net Revenues are at least equal to 1.10 times the Combined Maximum Annual Calculated Debt Service for all Subordinate Revenue Obligations, Parity Debt, Senior Obligations and Senior Parity Debt.



2. The Issuer covenants and agrees that in addition to complying with the provisions of Section 604 of the Resolution, the Issuer shall at all times establish, levy, maintain and collect, or cause to be established, levied, maintained and collected, such tolls, rentals and other charges in connection with the TBTA Facilities as shall always be sufficient, together with

other money available therefor (including the anticipated receipt of proceeds of sale of Obligations or other bonds, notes or other obligations or evidences of indebtedness of the Issuer that will be used to pay the principal of Obligations issued in anticipation of such receipt, but not including any anticipated or actual proceeds from the sale of TBTA Facilities), to equal or exceed in each calendar year the greater of (a) an amount equal to the sum of amounts necessary in such calendar year (i) to pay all Operating Expenses of the Issuer, plus (ii) to pay the sum of Calculated Debt Service as defined in the Resolution and Calculated Debt Service as defined in the Senior Resolution, plus (iii) to maintain any reserve established by the Issuer pursuant to the Senior Resolution, in such amount as may be determined from time to time by an Authorized Officer in his or her judgment, or (b) an amount such that Revenues less Operating Expenses shall equal at least 1.10 times the sum of Calculated Debt Service as defined in the Senior Resolution and Calculated Debt Service as defined in the Resolution for such calendar year.

**Section 4.03. Defeasance.** In the event the Issuer shall seek, prior to the maturity or redemption date thereof, to pay or cause to be paid, within the meaning and with the effect expressed in the Resolution, all or less than all Outstanding Refunding Bonds issued as Tax-Exempt Obligations and the provisions of Section 4.01 hereof shall then be of any force or effect, then, notwithstanding the provisions of Article A-XI of the Resolution, the Refunding Bonds issued as Tax-Exempt Obligations which the Issuer then seeks to pay or cause to be paid shall not be deemed to have been paid within the meaning and with the effect expressed in Section A-1101 of the Resolution unless (i) the Issuer has confirmed in writing that the Owners of the Refunding Bonds issued as Tax-Exempt Obligations which the Issuer then seeks to pay or cause to be paid will continue, after such action, to have the benefit of a covenant to the effect of the covenant of the Issuer contained in Section 4.01 hereof or (ii) there shall have been delivered to the Trustee an Opinion of Bond Counsel to the effect that non-compliance thereafter with the applicable provisions of the Code will not affect the then current treatment of interest on the Refunding Bonds issued as Tax-Exempt Obligations in determining gross income for Federal income tax purposes.

# Staff Summary

<b>Subject</b> MTA and TBTA Reimbursement for Federal Tax purposes	<b>Date</b> December 13, 2017
<b>Department</b> Chief Financial Officer	<b>Vendor Name</b>
<b>Department Head Name</b> Robert E. Foran, Chief Financial Officer	<b>Contract Number</b>
<b>Department Head Signature</b> 	<b>Contract Manager Name</b>
<b>Project Manager Name</b> Josiane Codio, Director of Treasury 	<b>Table of Contents Ref #</b>

Board Action						Internal Approvals			
Order	To	Date	Approval	Info	Other	Order	Approval	Order	Approval
	Finance Comm.	12/11	X			1	Legal 	2	Chief of Staff 
	Board	12/13	X						

To obtain MTA and TBTA adoption of the annexed reimbursement resolutions, which are required by Federal tax law to preserve the ability to finance certain capital projects on a tax-exempt basis.

## PURPOSE:

As it has in the past, the Metropolitan Transportation Authority (the "MTA") intends to finance the MTA's transit and commuter capital improvement program, including MTA Bus Company and Staten Island Rapid Transit Operating Authority, and Triborough Bridge and Tunnel Authority ("TBTA" or "MTA Bridges and Tunnels") intends to finance the MTA Bridges and Tunnels' bridge and tunnel capital improvement program.

It is important that MTA and MTA Bridges and Tunnels preserve the ability to finance capital projects in these capital improvement programs on a tax-exempt or tax-advantaged basis. To maintain the ability of MTA and MTA Bridges and Tunnels to finance capital projects in the capital improvement programs on such tax-exempt or tax-advantaged basis, consistent with Federal tax law, the MTA and TBTA Boards periodically adopt reimbursement resolutions. Federal tax law requires that official action that sets forth the issuer's intent to spend tax-exempt bond proceeds on a project must be taken by an issuer that wants to reimburse itself from tax-exempt bond proceeds for capital project costs that were funded from another source of revenue. Copies of the 2018 reimbursement resolutions submitted for Board adoption are attached hereto.

For purposes of the attached reimbursement resolutions, (i) in the case of MTA, the Project refers to the capital programs approved by the Metropolitan Transportation Authority Capital Program Review Board (CPRB), including, particularly, the 2000-2004 Transit and Commuter Capital Program, the 2005-2009 Transit and Commuter Capital Program, the 2010-2014 Transit and Commuter Capital Program, and the 2015-2019 Transit and Commuter Capital Program, and (ii) in the case of TBTA, the Project refers to the capital programs approved by the TBTA Board, including, particularly, the 2000-2004 TBTA Capital Program, the 2005-2009 TBTA Capital Program, the 2010-2014 TBTA Capital Program, the 2015-2019 TBTA Capital Program, and the security projects authorized to be constructed and/or installed at the TBTA bridges and tunnels.

## ALTERNATIVES:

There is no alternative to preserve the ability to finance certain capital projects on a tax-exempt or tax-advantaged basis under Federal tax law.

## RECOMMENDATION:

## Staff Summary

The MTA and TBTA Boards approve the above-referenced resolutions. This authorization shall continue in effect until the adoption in 2018 by the MTA and TBTA Boards of subsequent reimbursement resolutions.

## **RESOLUTION**

**WHEREAS**, Metropolitan Transportation Authority (“MTA”) intends to finance the MTA’s transit and commuter capital improvement program, including MTA Bus Company and Staten Island Rapid Transit Operating Authority, as more fully described in the accompanying staff summary and capital program documents referenced therein (the “MTA Project”);

**WHEREAS**, MTA desires to finance the MTA Project through the issuance of tax-exempt debt or tax-advantaged debt, if available, and other sources as described in the approved capital programs, including moneys derived from affiliates and subsidiaries, and expects to reimburse expenditures made from such other sources with proceeds of such tax-exempt or tax-advantaged debt;

### **NOW THEREFORE, BE IT:**

**RESOLVED**, that the statements contained in this Resolution with respect to the reimbursement of the expenditures described in this resolution are intended to be statements of official intent as required by, and in conformance with, the provisions of Treasury Regulation Section 1.150-2(e); and

**RESOLVED**, that the expenditures in connection with the MTA Project to be reimbursed pursuant to this Resolution have been incurred and paid not more than 60 days prior to the date hereof or will be incurred and paid after the date hereof in connection with the MTA Project; and

**RESOLVED**, that the MTA reasonably expects that the maximum principal amount of tax-exempt or tax-advantaged debt (including bonds, commercial paper and bond anticipation notes) to be issued by MTA subsequent to the date hereof to pay MTA Project expenditures in 2018 (whether directly or as a reimbursement) is \$3,000 million (plus associated financing costs); and

**RESOLVED**, that this Resolution shall take effect immediately.

December 13, 2017

## **RESOLUTION**

**WHEREAS**, Triborough Bridge and Tunnel Authority (“MTA Bridges and Tunnels”) intends to finance the MTA Bridges and Tunnels’ bridge and tunnel capital improvement program, as more fully described in the accompanying staff summary and capital program documents referenced therein (the “Project”);

**WHEREAS**, MTA Bridges and Tunnels desires to finance the Project through the issuance of tax-exempt debt or tax-advantaged debt, if available, and other sources as described in the approved capital programs, including moneys derived from the Metropolitan Transportation Authority and its affiliates and subsidiaries, and expects to reimburse expenditures made from such other sources with proceeds of such tax-exempt or tax-advantaged debt;

### **NOW THEREFORE, BE IT:**

**RESOLVED**, that the statements contained in this Resolution with respect to the reimbursement of the expenditures described in this resolution are intended to be statements of official intent as required by, and in conformance with, the provisions of Treasury Regulation Section 1.150-2(e); and

**RESOLVED**, that the expenditures in connection with the Project to be reimbursed pursuant to this Resolution have been incurred and paid not more than 60 days prior to the date hereof or will be incurred and paid after the date hereof in connection with the Project; and

**RESOLVED**, that MTA Bridges and Tunnels reasonably expects that the maximum principal amount of tax-exempt or tax-advantaged debt (including bonds, commercial paper and bond anticipation notes) to be issued by MTA Bridges and Tunnels subsequent to the date hereof to pay MTA Bridges and Tunnels Project expenditures in 2018 (whether directly or as a reimbursement) is \$200 million (plus associated financing costs); and

**RESOLVED**, that this Resolution shall take effect immediately.

December 13, 2017

# Staff Summary

## Schedule F: Personal Service Contracts

<b>Item Number:</b> <b>Dept &amp; Dept Head Name:</b> Chief Financial Officer/Bob Foran						<b>SUMMARY INFORMATION</b>	
<b>Division &amp; Acting Division Head Name:</b> Strategic Initiatives/ Nora Ostrovskaya						<b>Vendor Name:</b> NYPA	
						<b>Contract Number:</b>	
						<b>Description:</b> Energy Supply Long Term Agreement and Energy Services Program Agreement	
						<b>Total Amount:</b> Estimated at \$198 million	
<b>Board Reviews</b>						<b>Contract Term (including Options, if any):</b> One (1) Year Extension	
Order	To	Date	Approval	Info	Other	<b>Option(s) included in Total Amount?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
1	Finance	12/11/17	X			<b>Renewal – two (2) one-year renewals</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2	Board	12/13/17	X			<b>Procurement Type:</b> <input type="checkbox"/> Competitive <input type="checkbox"/> Non-competitive	
						<b>Solicitation Type:</b> <input type="checkbox"/> RFP <input type="checkbox"/> Bid <input type="checkbox"/> Other: [e.g., Ride -- Contract]	
						<b>Funding Source:</b> <input checked="" type="checkbox"/> Operating <input type="checkbox"/> Capital <input type="checkbox"/> Federal <input type="checkbox"/> Other:	

### Narrative

#### I. PURPOSE/RECOMMENDATION

To obtain Board approval for an extension of the (1) long-term contract with the New York Power Authority (NYPA) to supply electricity to all of the MTA agencies for facilities and operations within the City of New York and Westchester County and (2) Energy Services Program Agreement between NYPA and the MTA.

#### II. DISCUSSION

NYPA has supplied the MTA and the other Southeast New York (SENY) governmental customers with electricity since 1976. In addition to the MTA, the SENY customers include the City of New York, the New York City Housing Authority, the Port Authority of New York and New Jersey, the Javits Convention Center, the New York State Office of General Services and Westchester County.

In March of 2005, the MTA entered into a long-term agreement with NYPA containing supplemental terms and conditions to the original 1976 Application for Electric Service, and providing for NYPA's continuing supply of energy and capacity to the MTA through December 31, 2017 (the "2005 LTA").

Throughout 2017 the MTA has been engaged in substantial ongoing negotiations with NYPA with regards to a new long-term agreement ("2018 LTA") and has provided revised terms and conditions for NYPA to supply energy and capacity to the MTA following the expiration of the 2005 LTA, but it appears such negotiations may not be concluded by the expiration date of the 2005 LTA.

To enable the orderly continuation and completion of negotiations, and the efficient transition to the 2018 LTA the MTA must extend the 2005 LTA through December 31, 2018. This extension will be null and void upon the execution of the 2018 LTA.

Concurrently with entering into the 2005 LTA, MTA and NYPA entered into the Energy Services Program Agreement (“ESP Agreement”) to identify energy efficiency and clean energy technology projects at MTA facilities and to implement such projects that were economically feasible. The ESP Agreement was tied to the 2005 LTA, which by its terms expires on December 31, 2017.

The MTA needs to extend the ESP Agreement through December 31, 2018 so as to maintain the continuity of services being provided on projects currently being performed under the ESP Agreement, as well as those in development, until a new agreement between the Parties is executed to implement future projects under the MTA’s Energy Services Program.

### **III. IMPACT ON FUNDING**

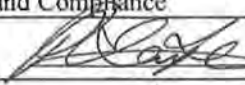

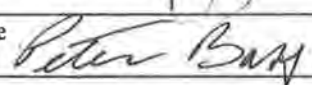
There will be no impact. The extension will carry forward tariffs established for 2018 under the 2005 LTA. The actual costs of electric supply going forward will vary depending on market conditions, such as cost of fuel and demand for electric power, which in turn fluctuates based on weather and other factors. In 2016 MTA paid NYPA approximately \$166 million for electric supply. The 2017 year-to-date costs were approximately \$166 million. The estimated cost for 2018 is \$198 million.

### **IV. ALTERNATIVES**

The alternative would be to receive electric supply from Con Edison as a supplier of “last resort” which is likely to increase the MTA’s costs, and to terminate the current ESP Agreement with NYPA which would result in disruption of projects currently being executed.



# Staff Summary

<b>Subject</b> Executive Order 88 - Advanced Metering Infrastructure
<b>Department</b> Environmental Sustainability and Compliance
<b>Director</b> -Porie Saikia-Eapen 
<b>Department Head Signature</b> Donald Spero 
<b>Division Head Name</b> Peter Bass 

<b>Date</b> November 22, 2017
<b>Vendor Name</b> New York Power Authority
<b>Contract Number</b> NA
<b>Contract Manager Name</b> NA
<b>Table of Contents Ref #</b>

Board Action					
Order	To	Date	Approval	Info	Other
1	Finance	12/11/17			
2	Board	12/13/17			

Internal Approvals			
Order	Approval	Order	Approval
3	Chief of Staff 	2	Legal 
1	Chief Financial Officer 		

## I. Purpose

To obtain Board approval to install advanced energy metering in MTA facilities utilizing the services of the New York Power Authority (NYPA), consistent with the MTA/NYPA Energy Services Program Agreement approved by the Board in December 2005, and in furtherance of the objectives of Executive Order 88, governing the improvement of energy efficiency in State buildings.

## II. Discussion

Under the terms of the Board-approved Energy Services Program Agreement with NYPA, the MTA and its affiliated agencies undertake energy-efficiency projects that are financed and managed by NYPA and paid back through a surcharge to the subject agency's electrical bill that is equal to, or less than, the value of the project's energy savings. Utilizing this method, energy-efficiency projects can be developed and executed without negatively impacting operating or capital budgets. Over one hundred and seventy energy-efficiency projects have been completed under this program, replacing such items as lighting, compressors, motors, pumps and boilers, with new energy-efficient equipment.

Executive Order 88 targets state agency and state authority buildings greater than 20,000 square feet for 20% energy use reductions by April 2020. To help accomplish this reduction, subject buildings are to install advanced metering infrastructure (AMI), which will allow subject facilities to measure and monitor their energy usage in near real-time.

In 2016, Consolidated Edison Company of New York (Con Ed) filed a proposal, subsequently approved, with the New York State Public Utility Commission for the installation of an advanced metering system for customers in their service territory, including MTA EO 88 facilities. Con Ed AMI installation began in 2017 and is scheduled to be completed in 2022. The cost of the Con Ed AMI program will be incorporated into their rates (as opposed to a surcharge). Consequently, the MTA decided to only install its own advanced metering infrastructure in those EO 88 facilities that are not Con Ed customers for natural gas, electricity or both.

Utilizing the services of NYPA, the MTA intends to install advanced metering, predominantly for natural gas, at twenty-five MTA facilities in Brooklyn, Queens, Staten Island, Putnam and Dutchess Counties, the services for which have been competitively procured by NYPA, at a cost of \$1,650,295.82. Subsequent to MTA Board approval, the MTA intends to execute a Customer Installation Commitment (CIC) with NYPA, which set forth the terms of the metering project, including the scope of services, schedule, cost (including fees and interest) and payment.

Under the terms of the Board approval for the 2005 Energy Services Program Agreement, projects conducted pursuant to that Agreement that result in net energy savings are not required to be presented to the Board. Projects for which there are no net savings are presented to the Board for approval. Although it is anticipated that advanced metering capability will lead to improved energy management and savings, the meters in and of themselves cannot be said to produce energy savings and thus are presented for Board approval.

### **III. Impact on Funding**

The total not-to-exceed cost of \$1,650,295.82 for the work is chargeable to the Environmental Sustainability and Compliance Department budget for Engineer Services.

### **IV. Alternative**

A scope of work and contract for advanced metering infrastructure could be developed and procured directly by the MTA. However, the MTA lacks advanced metering experience. NYPA has the necessary experience and expertise to implement and manage this work at a cost structure similar to, or less than, the MTA. In addition, the schedule to complete the work under Executive Order 88 is aggressive and would be difficult to achieve under standard procurement timelines. NYPA has already satisfactorily installed advanced metering on CUNY campuses and has the necessary services in place to execute this project.

### **V. Recommendation**

It is recommended that the Board approve NYPA to perform the installation of advanced metering infrastructure at MTA buildings, and authorize the MTA to enter into a Customer Installation Commitment with NYPA for this project.

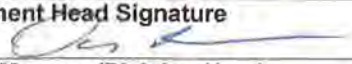

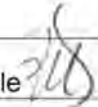
# MTA 2018 Budget & 2018- 2021 Financial Plan Adoption Materials

Distributed Separately

(Available in the Director's Desk Exhibit  
Book and MTA.Info)

# Staff Summary

Page 1 of 2

<b>Subject</b> MTA 2015-2019 Capital Program Amendment
<b>Department</b> Capital Programs
<b>Department Head Name</b> Don Spero
<b>Department Head Signature</b> 
<b>Project Manager/Division Head</b> Stephen Berrang  Stephanie DeLisle 

<b>Date</b> December 13, 2017
<b>Vendor Name</b>
<b>Contract Number</b>
<b>Contract Manager Name</b>
<b>Table of Contents Ref #</b>

Board Action					
Order	To	Date	Approval	Info	Other
1	Board	12/13			

Internal Approvals			
Order	Approval	Order	Approval
4	Managing Director 		
3	Chief of Staff 		
2	Chief Financial Officer 		
1	Legal 		

## Narrative

### Purpose:

To obtain MTA Board approval of a proposed \$348.5 million amendment to the MTA 2015-2019 Capital Program to support the MTA's "NYC Subway Action Plan."

### Discussion:

*Proposed 2015-2019 Capital Program Amendment:* This amendment increases the current capital program from \$32,457.3 million to \$32,805.8 million to incorporate the NYC Subway Action Plan (SAP). The increase will be reflected in the New York City Transit (NYCT) portion of the program, which will increase from \$16,315.4 million to \$16,663.9 million. Despite significant capital investment over the last 35 years to address critical deficiencies, the subway system is in distress due to a combination of factors. These include a near-record volume of customers, aging infrastructure, and insufficient capital investment. The result has been a decline in reliability in certain key service-delivery systems, a rise in service delays, and a deterioration in subway service.

The MTA has conducted a top-to-bottom analysis of how to transform the NYC Subway to deliver better service for our customers with the objective of developing a two-phase NYC Subway Action Plan. Near-term steps will stabilize and improve the system and lay the foundation for modernizing the New York City Subway. The strategy is to target personnel and equipment on the critical components of the system determined to have the highest incidence of failure. Through capital investments and complementary initiatives via the operating budget, it will jump start improvements over the next 14 months, and then maintain that level of effort going forward.

This amendment proposes to add \$348.5 million to NYCT's capital program for the following capital projects and budget elements:

- Continuous welded rail (CWR) (\$53.0 million in the Mainline Track Rehabilitation element): NYCT will increase the annual production capacity and pace over the remainder of the 2015-2019 Capital Program to provide more welded rail in place of bolted rail, to reduce track-related breakdowns and wear and tear on fleets, and to provide a more comfortable ride for customers.
- Signal Improvements (\$112.0 million in the Signal Modernization element): 30% of major incidents are related to signals. This proposed work will increase service reliability of signals and reduce maintenance on obsolete signal cables and equipment. Select signal cables, messenger brackets / straps, and stop machines will be replaced. Signal power equipment will be modernized by replacing obsolete automatic transfer panels at relay rooms, installing more emergency quick connect generator plugs, and purchasing additional temporary panels and spare plugs. The project will also assess and correct signal power equipment in relay rooms, distribution rooms, property line boxes, and trackside equipment.
- Upgrade 220 R142A Cars (\$175.0 million in the Subway Cars element): To improve reliability, 220 existing R142A A-Division cars will be modified to the newer standards of the R188 cars. Work will modify car interior, trucks, train control, propulsion, braking, monitoring and diagnostic systems. The cars also will be able to accommodate CBTC equipment.
- Purchase 59 Non-Revenue Vehicles (\$8.5 million in the Service Vehicles element): Additional non-revenue service vehicles are needed to more effectively support the SAP initiatives system-wide. These include such vehicles as heavy duty trucks, lifts, mobile washers, and vacuum trucks.

# Staff Summary

**Impacts on Funding:**

The proposed amendment adds \$348.5 million in MTA Bonds to the 2015-2019 Capital Program to begin implementation of the Subway Action Plan, increasing the funding envelope to \$32,805.8 million. However, the 2015-2019 Capital Program funding may be revised at a later date should New York State and City capital funds be available in lieu of these added MTA Bonds. Should the funding level for the Subway Action Plan be revised, changes to the projects listed in this amendment will be required.

**Alternatives:**

There are no viable alternatives. The amendment is critical to halting deteriorating performance in the subway, and to continue renewing and enhancing the MTA's network to meet the mobility needs of the region.

**Recommendation:**

That the MTA Board approve the proposal to amend the MTA 2015-2019 Capital Program as described.



# FINANCE COMMITTEE CONTRACT CHANGE ORDER REPORT - 3rd Quarter (Jul-Sept 2017)

(NON-CAPITAL CHANGE ORDER VALUE MORE THAN \$250,000 -- UP TO \$750,000)

Agency	Contract Number	Contract Description	Base Contract Value**	Prior Modifications Value	Current Change Order Value	Percentage of Current Change Order Value to Base Contract Value	Change Order Number	Date of Change Order Award	Change Order Description
NYCT	B-40657	Purchase of 300 Over-the-Road Express Buses	\$ 164,838,002	\$ 881,851	\$ 707,448	0.43%	2	8/1/2017	Technical Changes and Incorporate Language
NYCT	09F0102A	Maintenance and Support for DYNAC based SCADA Software	\$ 192,408	\$ -	\$ 397,800	206.75%	2	8/18/2017	Contract Extension
NYCT	Req. 33641	Printing and Delivery of Pocket Borough Bus Maps	\$ 1,363,350	\$ 152,872	\$ 203,700	26.15%	4	9/27/2017	Contract Extension
NYCT	Req. 36639	Printing and Delivery of Various Size Maps	\$ 381,568	\$ 253,169	\$ 205,474	120.20%	5	9/27/2017	Contract Extension
NYCT	06%11202/ PO 6030172130	Reproductions of Drawings and Specifications	\$ 1,100,047	\$ -	\$ 242,750	22.06%	1	8/2/2017	Contract Extension
NYCT	05D9182B	Provide Customer Research Support Services	\$ 144,539	\$ 1,703,044	\$ 250,000	172.96%	14	8/6/2017	Contract Extension
LIRR	04-840	Specialty Excavating Services	\$ 6,700,000	\$ -	\$ 647,937	9.67%	1	9/28/2017	2 month extension
MTA B&T	12-MNT-2904Y	Removal and Disposal of Sanitary Waste at the Hugh L. Carey Tunnel, Henry Hudson and Robert F. Kennedy (Manhattan Lift Span) Bridges	\$ 274,305	\$ -	\$ 75,000	27.34%	1	9/18/2017	Provide sanitary services for Authority-owned trailers/restrooms and equipment (restroom) rental
MTA HQ	PO3000002470	Oracle Mobile Cloud Services	\$ 61,425	\$ 112,776	\$ 206,154	335.62%	2	8/10/2017	Add more mobile cloud services for the Collisions Accidents Reporting System (CARS) application at B&T, Unified Timekeeping System (UTS) & Unified General Order System (UGOS) and Right Now applications at NYCT.
MTA HQ	15-TD-2947X	Oracle Form Modernization Project	\$ 106,500	\$ 157,000	\$ 97,477	91.53%	2	8/18/2017	Transform the legacy Oracle forms applications to improve the way employees, managers and end users interact with the current systems and business processes.

\*\* Including any exercised options

CPOC COMMITTEE CONTRACT CHANGE ORDER REPORT* - 3rd Quarter 2017 (FOR INFORMATION ONLY)									
Agency	Contract Number	Contract Description	Base Contract Value**	Prior Modifications Value	Current Change Order Value	Percentage of Current Change Order Value to Base Contract Value	Change Order Number	Date of Change Order Award	Change Order Description
MTA B&T	RK-75	Demolition of Occupied Spaces Beneath the Manhattan Plaza at the RFK Bridge	\$15,377,685	\$0	\$413,083	2.69%	1	7/10/2017	Five contract items increased as required by actual field conditions. Addition of a generator installation.
MTA B&T	15-OPR-2948	Install Emergency Lighting and Equipment in Authority-owned Vehicles and provide Whelen Engineering Equipment	\$214,722	\$245,000	\$245,000	114.10%	2	7/17/2017	Additional emergency lighting purchases are required to out-fit approved additions to the Patrol Law Enforcement Inventory.
MTA B&T	BB-28S	Sandy Restoration and Projects BB-28/BB-54, Rehabilitation of the Tunnel and Brooklyn Plaza at the Hugh L. Carey Tunnel	\$282,454,276	\$55,836,224	\$260,328	0.09%	17	8/1/2017	Provide all labor, material and equipment deemed necessary to furnish new clock face interior mechanism for the Manhattan Blower Building (MBB) and remove/re-install additional granite stone at the HCT Manhattan Plaza retaining wall in the area of the Open Road Tolling Gantries.
MTA B&T	RK-65A	Bronx Plaza / Structural Rehabilitation at the RFK	\$213,400,794	\$27,673,311	\$605,484	0.28%	11	8/7/2017	Acceleration of contract items (floor beam stability, temporary lighting and power for shielding, steel fabrication, trucking, Stage 2 demo), ORT modifications per revised design, modification of Milestone II, and deletion of quantities per current anticipated needs
MTA B&T	MP-03/MP-16	Electrical and Mechanical Rehabilitation, Friction Mitigation, Misc. Steel Repairs, Painting and Fire Standpipe Installation at the Marine Park- Gil Hodges Memorial Bridge	\$98,500,000	\$22,986,215	\$587,704	0.60%	7	8/30/2017	Additional work including but not limited to: additional excavation and sheeting; core drilling through concrete exterior tie beams; installation of piping sleeves to route the 12" water main; back fill; trenching; installation of conduit, wiring and heat tracing systems.
MTA B&T	PO 3000002305	Repair, Replacement and Testing of Petroleum Tanks and Associated Piping at Various Authority Locations	\$518,180	\$0	\$100,000	19.30%	1	9/6/2017	Upgrade fuel dispensers and associated equipment at the Hugh L. Carey Tunnel
MTA B&T	QM-30	Facility Wide Electrical Upgrade and Vent Buildings Switch Gear and MCC Replacement at the Queens Midtown Tunnel.	\$38,808,536	\$4,102,893	\$444,038	1.14%	15	9/27/2017	Provide all labor, material and equipment deemed necessary for contract changes associated with modifications to the Service Building emergency generator.
MTA B&T	BB-28S	Sandy Restoration and Projects BB-28/BB-54, Rehabilitation of the Tunnel and Brooklyn Plaza at the Hugh L. Carey Tunnel	\$282,454,276	\$56,096,552	\$623,792	0.22%	18	10/12/2017	Provide all labor, material and equipment deemed necessary to route Governors Island Ventilation Building (GIVB) pump feeder cable through existing transite ducts and remove/completely replace the existing GIVB heat trace panel.

**CPOC COMMITTEE CONTRACT CHANGE ORDER REPORT\* - 3rd Quarter 2017**  
**(FOR INFORMATION ONLY)**

Agency	Contract Number	Contract Description	Base Contract Value**	Prior Modifications Value	Current Change Order Value	Percentage of Current Change Order Value to Base Contract Value	Change Order Number	Date of Change Order Award	Change Order Description
MTACC	CM014B	GCT Concourse and Facilities Fit-Out	\$428,900,000	\$14,193,431	\$385,000	0.09%	62	9/13/2017	MNR Reframe Existing Escalators ES-01 & ES-02
MTACC	A-35301	Cortlandt Street #1 Line Station Rehabilitation	\$101,150,000	\$3,008,229	\$327,000	0.32%	26	8/4/2017	Smoke Exhaust Fans/ Variable Frequency Drives
MTACC	A-35301	Cortlandt Street #1 Line Station Rehabilitation	\$101,150,000	\$3,008,229	\$415,690	0.41%	64	7/28/2017	Mechanical Changes
MTACC	A-35301	Cortlandt Street #1 Line Station Rehabilitation	\$101,150,000	\$3,008,229	\$747,800	0.74%	72	9/1/2017	Change in Scope: Bulletin 2: Architectural Changes
MTACC	A-35301	Cortlandt Street #1 Line Station Rehabilitation	\$101,150,000	\$6,246,371	\$297,500	0.29%	92	8/17/2017	114 Liberty Street Transformer Vault
MTACC	C-26008	Second Avenue Subway - 86th Street Station - Station Cavern Mining and Heavy Civil/Structural in the Borough of Manhattan	\$301,860,000	\$23,844,336	\$350,560	0.12%	132	8/23/2017	Global Settlement and Reconciliation of Remaining Work
MTACC	C-26009	Second Avenue Subway - Track, Signal, Traction Power, and Communications Systems in the Borough of Manhattan	\$261,900,000	\$28,721,748	\$315,000	0.12%	239	7/26/2017	Trim High Bench on Tracks
MTACC	C-26011	Second Avenue Subway - 72nd Street Station Finishes, Borough of Manhattan	\$258,353,000	\$37,397,504	\$379,000	0.15%	170	9/15/2017	Platform Service Carrier Modification
LIRR	6075	Design of JCI Phase I	\$8,574,971	\$5,423,651	\$528,124	6.16%	16	9/15/2017	Additional Force Account CPS
LIRR	6075	Design of JCI Phase I	\$8,574,971	\$5,423,651	\$623,215	7.27%	17	9/15/2017	Additional 3rd Party CPS
LIRR	6075	Design of JCI Phase I	\$8,574,971	\$5,423,651	\$468,253	5.46%	18	9/15/2017	Additional 3rd Party Signal Vendor CPS
LIRR	6229	Design/Build Services for the Mainline Second Track Ronkonkoma Branch Phase II	\$56,015,000	\$3,749,887	\$386,985	0.69%	3	7/13/2017	Furnish 2 Additional #10 Turnouts
LIRR	6229	Design/Build Services for the Mainline Second Track Ronkonkoma Branch Phase II	\$56,015,000	\$3,749,887	\$566,102	1.01%	4	7/13/2017	Additional Switch Machines and Accessories
MNR	1000039881	Design Build Power/C&S Infrastructure Improvements CP-5 to CP-35	\$192,420,000	\$8,087,671	\$717,014	4.20%	12	8/21/2017	Supply and direct Bury 8-4" PVC C&s Conduits
NYCT	A-86071	Consulting Services for the New Fare Payment System (NFPS)	\$4,498,136	\$670,000	\$650,000	14.45%	4	8/30/2017	Additional Consulting Support Services for NFPS
NYCT	C-34914	Shop Repairs at Pitkin Shop and DC Power Upgrade at Concourse Shop in the Boroughs of Brooklyn and the Bronx	\$14,328,282	\$627,115	\$397,000	2.80%	5	9/15/2017	Repairs to the South Roof at the Pitkin Shop and Extend the Contract
NYCT	A-36916/C-34920	Component Repairs at Dyre Avenue, Dyre Avenue Line	\$16,224,000	\$950,606	\$340,000	2.10%	6	8/1/2017	Replacement of Thru Span Floor Beams and Stringers
NYCT	S-32773	Signal System Modernization of the Dyre Avenue Line	\$125,336,268	\$1,379,402	\$365,000	0.29%	15	7/12/2017	Cable Tray at Gun Hill Road Station
NYCT	A-36308	Stations Renewal at Five Locations, Liberty Avenue, Borough of Queens	\$39,339,000	\$216,160	\$461,450	1.17%	21	9/14/2017	Additional Steel Repairs at 80th Street and 111th Street Stations Platform
NYCT	A-36007/08/09/10/16	Renewal of Five Stations: Buhre Avenue, Middletown Road, Zerega Avenue, Castle Hill Avenue and Pelham Bay Park Stations, Pelham Line, Borough of the Bronx	\$62,677,179	\$2,440,170	\$461,070	0.74%	58	9/18/2017	Removal of Additional Rivets of Buhre Avenue, Middletown Road, Zerega Avenue and Castle Hill Avenue Stations
NYCT	W-32686R1	VHF Radio System Upgrade in the Boroughs of Brooklyn, Manhattan, Queens, and the Bronx	\$105,001,093	\$2,502,857	\$440,000	0.42%	64	7/26/2017	New VHF Radio Equipment
NYCT	CM-1188	Engineering Services for the Second Avenue Subway Project	\$337,584,886	\$110,384,965	\$598,438	0.18%	120	9/6/2017	Re-entry at Emergency Doors in Second Avenue Subway Stations
NYCT	S-32723	Signal System Modernization, CBTC Flushing Line	\$343,518,371	\$4,023,842	\$540,750	0.16%	63	5/5/2017***	Communication Cable Between Willets Point and Main Street

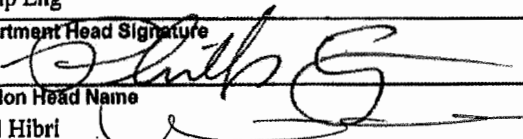
**\*Capital change order value \$250,000 to \$750,000, and change orders from \$50,000 to \$250,000 but over 15% of the adjusted contract amount**

**\*\* Including any exercised options**

**\*\*\* This item was inadvertently omitted from the 2nd Quarter 2017 Report**



# Staff Summary

<b>Subject</b>
Request for Authorization to Award Various Procurements
<b>Department</b>
Executive
<b>Department Head Name</b>
Phillip Eng
<b>Department Head Signature</b>

<b>Division Head Name</b>
Wael Hibri

<b>Date</b>
November 29, 2017
<b>Vendor Name</b>
Various
<b>Contract Number</b>
Various
<b>Contract Manager Name</b>
Various
<b>Table of Contents Ref #</b>

Board Action					
Order	To	Date	Approval	Info	Other
1	Finance	12/11/2017	X		
2	Board	12/13/2017	X		

Internal Approvals			
Order	Approval	Order	Approval
1	Procurement	3	CFO
2	Legal		

## PURPOSE:

To obtain approval of the Board to award various contracts/contract modifications and purchase orders, as reviewed by the MTA Finance Committee.

## DISCUSSION:

MTAHQ proposes to award Non-competitive procurements in the following categories:

# of Actions   \$ Amount

### Schedules Requiring Majority Vote

None

MTAHQ proposes to award Competitive procurements in the following categories:

### Schedules Requiring Majority Vote

Schedule F: Personal Services Contracts

	2	\$	3,133,960.00
<b>SUBTOTAL</b>	2	\$	3,133,960.00

MTAHQ presents the following procurement actions for Ratification:

Schedule K: Ratification of Completed Procurement Actions

	4	\$	12,035,428.00
<b>TOTAL</b>	6	\$	15,169,388.00

**BUDGET IMPACT:** The purchases/contracts will result in obligating MTAHQ operating and capital funds in the amount listed. Funds are available in the current MTAHQ operating/capital budgets for this purpose.

**RECOMMENDATION:** That the purchases/contracts be approved as proposed. (Items are included in the resolution of approval at the beginning of the Procurement Section.)

## BOARD RESOLUTION

### METROPOLITAN TRANSPORTATION AUTHORITY

WHEREAS, in accordance with Section 1265-a and Section 1209 of the Public Authorities Law and the All Agency Procurement Guidelines, the Board authorizes the award of certain non-competitive purchase and public work contracts, and the solicitation and award of request for proposals in regard to purchase and public work contracts; and

WHEREAS, in accordance with the All Agency Procurement Guidelines, the Board authorizes the award of certain non-competitive miscellaneous procurement contracts, and certain change orders to procurement, public work, and miscellaneous procurement contracts; and

WHEREAS, in accordance with Section 2879 of the Public Authorities Law and the All Agency Guidelines for Procurement of Services, the Board authorizes the award of certain service contracts and certain change orders to service contracts.

NOW, the Board resolves as follows:

1. As to each purchase and public work contract set forth in the annexed Schedule A, the Board declares competitive bidding to be impractical or inappropriate for the reasons specified therein and authorizes the execution of each such contract.

2. As to each request for proposals (for purchase and public work contracts) set forth in Schedule B for which authorization to solicit proposals is requested, for the reasons specified therein the Board declares competitive bidding to be impractical or inappropriate, declares it is in the public interest to solicit competitive request for proposals and authorizes the solicitation of such proposals.

3. As to each request for proposals (for purchase and public work contracts) set forth in Schedule C for which a recommendation is made to award the contract, the Board authorizes the execution of said contract.

4. The Board ratifies each action taken set forth in Schedule D for which ratification is requested.

5. The Board authorizes the execution of each of the following for which Board authorization is required: i) the miscellaneous procurement contracts set forth in Schedule E; ii) the personal service contracts set forth in Schedule F; iii) the miscellaneous service contracts set forth in Schedule G; iv) the modifications to personal/miscellaneous service contracts set forth in Schedule H; v) the contract modifications to purchase and public work contracts set forth in Schedule I; and vi) the modifications to miscellaneous procurement contracts set forth in Schedule J.

6. The Board ratifies each action taken set forth in Schedule K for which ratification is requested.

7. The Board authorizes the budget adjustments to estimated quantity contracts set forth in Schedule L.

**LIST OF PROCUREMENTS FOR BOARD APPROVAL, NOVEMBER 2017**  
**COMPETITIVE PROCUREMENTS**

**METROPOLITAN TRANSPORTATION AUTHORITY**

*Procurements Requiring Majority Vote:*

**F. Personal Service Contracts**

(Staff Summaries required for items greater than: \$100k Sole Source; \$250 other Non-Competitive, \$1 million Competitive)

1. **Siwel Consulting, Inc.** **\$235,000.00**  
**Software License Optimization Consulting** (not-to-exceed)  
**Contract No. 900000000002458**  
Competitively Negotiated      5 proposal      3 months  
To obtain Board approval for the award of a competitively negotiated, personal service contract with Siwel Consulting to review MTA's Software Asset Management (SAM) environment, identify gaps and improvement opportunities, and recommend software asset optimization strategies. Siwel's not-to-exceed amount of \$235,000 includes travel costs and covers hourly rates ranging from \$116 to \$178 during the three month performance period for a total of 1526 resource hours to complete RFP deliverables. Pricing is deemed fair and reasonable.
2. **Ayuda Media Systems** **\$2,898,960** **Staff Summary Attached**  
**Data Management Platform** (not-to-exceed)  
**Contract No. 15212-0100**  
Competitively Negotiated      3 proposal      84 months  
To obtain Board approval for the purchase of off-the-shelf software from Ayuda Media Systems to facilitate MTA's realization of the benefits of the recently awarded advertising concessions. This bi-directional data management platform (DMP) will serve as a repository for data relating to these concessions, including data pertaining to agency messaging as well as advertising sales. The DMP will house data relating to pedestrian traffic within MTA stations and railcars, as well as data relating to advertising inventory, sales and revenues, and serve as a platform for agency messaging, including real time arrival/departure information, service status information and information concerning upcoming service changes. Pricing is found to be fair and reasonable.

## Staff Summary

### Schedule F: Personal Service Contracts

<b>Item Number:</b> <b>Dept &amp; Dept Head Name:</b> MTA IT, Sidney Gellineau						<b>SUMMARY INFORMATION</b>	
<b>Division &amp; Division Head Name:</b> MTA IT, Dino Di Pietro & Robert Fortenza						<b>Vendor Name:</b> Ayuda Media Systems	
						<b>Contract Number:</b> 15212-0100	
<b>Description:</b> Data Management Platform							
<b>Total Amount:</b> Not to exceed \$2,898,960							
<b>Contract Term (including Options, if any):</b> Five (5) Years							
<b>Option(s) included in Total Amount?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No							
<b>Renewal – two (2) one-year renewals</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No							
<b>Procurement Type:</b> <input checked="" type="checkbox"/> Competitive <input type="checkbox"/> Non-competitive							
<b>Solicitation Type:</b> <input checked="" type="checkbox"/> RFP <input type="checkbox"/> Bid <input type="checkbox"/> Other: [e.g., Ride -- Contract]							
<b>Funding Source:</b> <input checked="" type="checkbox"/> Operating <input type="checkbox"/> Capital <input type="checkbox"/> Federal <input type="checkbox"/> Other:							

Board Reviews					
Order	To	Date	Approval	Info	Other
1	Finance	12/11/17	X		
2	Board	12/13/17	X		

Internal Approvals			
Order	Approval	Order	Approval
1	Procurement	4	DDCR
2	MTA IT	5	Legal
3	Real Estate	6	CFO

#### Narrative

#### I. PURPOSE/RECOMMENDATION

To obtain Board approval for the purchase of off-the-shelf software from Ayuda Media Systems to facilitate MTA's realization of the benefits of the recently awarded advertising concessions. This bi-directional data management platform (DMP) will serve as a repository for data relating to these concessions, including data pertaining to agency messaging as well as advertising sales.

#### II. DISCUSSION

The Board recently authorized the granting of new multi-agency advertising concessions pursuant to which the concessionaire will be required to invest hundreds of millions of dollars to create a network of tens of thousands of new screens that will significantly enhance both the revenue-generating potential of the advertising in the MTA system and MTA's ability to deliver timely, targeted messages to its customers. The proposed DMP will provide MTA with tools to assist in its administration and auditing of the complex financial arrangements underlying such concessions and enable it to interface effectively with the concessionaire-provided software and hardware by means of which the concessionaire will discharge its obligation to devote approximately 20% of the time and/or space on its screens to real-time and other agency messaging. The DMP will house data relating to pedestrian traffic within MTA stations and railcars, as well as data relating to advertising inventory, sales and revenues, and serve as a platform for agency messaging, including real time arrival/departure information, service status information and information concerning upcoming service changes.

A Request for Proposals (RFP) was sent to 25 firms, and advertised in the New York State Contract Reporter, NY Post, El Diario and Minority Commerce Weekly. Three proposals were received, of which two were deemed technically qualified. The third proposal failed to address data retention and other core service requirements contained in the RFP.

The selection committee was comprised of personnel from MTAHQ Office of Strategic Initiatives, MTA Office of Information Technology, MTA Real Estate, NYCT Operations Support, LIRR Public Affairs, LIRR Engineering, MNR Customer Service and Stations and MTA Buses Customer Information Systems. The evaluation criteria were: (1) experience and qualifications; (2) quality of the proposed software (3) cost; (4) responsiveness to the RFP; and (5) the proposer's diversity practices.

Ayuda offered the lowest cost option proposed and scored higher than the other qualified proposal on technical criteria as well. Its proprietary software platform offers a variety of functions including asset management, contract management, rate card management and emergency messaging. Ayuda's platform is built for use by large clients with expansive network applications, minimizing the need for costly software customizations. It is highly scalable and can accommodate the growing data retention requirements typically associated with a large and expanding screen networks. Ayuda's references confirmed its extensive experience with large networks, an important advantage since MTA's network is expected to contain tens of thousands of individually-addressable screens.

Ayuda's original proposal valued the development, implementation and 5-year license at \$3,042,360, including \$207,360 for scope development and training in year one and a \$567,000 annual licensing fee per year for five years. Negotiations focused on training and licensing needs, as well as the inclusion of software components for interfaces to store ridership data that may be used for operations and planning and to communicate all-agency messaging to the advertising concessionaire. Negotiations yielded a best and final offer (BAFO) of \$2,898,960. Pricing for the development and implementation of the platform increased to \$216,960 because of enhanced functionality that requires bi-directional interfaces for messaging. Annual licensing fees were reduced to \$536,400 annually (a 5.4% reduction for the same services) per year for five years. Ayuda's BAFO of \$2,898,960 is 41% lower than the other responsive proposal and the non-responsive proposal was even higher priced. Based on the foregoing, the BAFO of \$2,898,960 is found to be fair and reasonable.

In connection with the review of the contractor's responsibility pursuant to the All-Agency Responsibility Guidelines, the Contractor was found to be responsible and qualified for the contract award.

### **III. D/M/WBE INFORMATION**

The MTA Department of Diversity and Civil Rights (DDCR) did not assign MWBE goals to this contracts due to the insufficient number of available MWBE firms in the marketplace that were able to provide the software and licenses required for the solicitation.

### **IV. IMPACT ON FUNDING**

The total not-to-exceed cost of \$2,898,960 will be funded by MTA Real Estate using funds generated by the advertising concessions.

### **V. ALTERNATIVES**

The alternative would be to rely exclusively on reports generated by the advertising concessionaire or data the concessionaire provides MTA access to, and to endeavor to make due with an ad hoc, uncoordinated approach to delivering agency messages to the concessionaire.

**LIST OF PROCUREMENTS FOR BOARD APPROVAL, DECEMBER 2017**  
**PROCUREMENTS FOR RATIFICATION**

**METROPOLITAN TRANSPORTATION AUTHORITY**

*Procurements Requiring Majority Vote:*

**K. Ratifications of Completed Procurement Actions (Involving Schedules E-J)**

(Staff Summaries required for unusually large or complex items which otherwise would require Board approval)

<b>4. Various</b>	<b>\$12,035,428</b>	<b><u>Staff Summary Attached</u></b>
<b>Executive Order 168</b>		

This is a request that the Board ratify procurement actions awarded pursuant to Executive Order 168 ("E.O. 168") and its extensions. The procurement actions listed in Attachment 1 were procured without a formal competitive process. In accordance with the emergency provisions in Article III(B)(1) of the All Agency General Contract Procurement Guidelines and Article III(C)(3) of the All Agency Service Contract Procurement Guidelines, the E.O. 168 procurement actions listed in Attachment 1 are being submitted to the Board for ratification. The total estimated value for the four actions is \$12,035,428. All four actions are for NYC Transit.

# Staff Summary

## Schedule K: Ratification of Completed Procurement Actions (Involving Schedules E-J)

Page 1 of 1

Item Number:

<b>Vendor Name (&amp; Location):</b> Various	<b>Contract Number:</b> Various	<b>Renewal?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Description:</b> Ratification of Executive Order 168 Actions	<b>Total Amount:</b> \$ 12,035,428	
<b>Contract Term (including Options, if any):</b> Various	<b>Funding Source:</b> <input checked="" type="checkbox"/> Operating <input type="checkbox"/> Capital <input type="checkbox"/> Federal <input type="checkbox"/> Other:	
<b>Option(s) included in Total Amount?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>Requesting Dept/Div &amp; Dept/Div Head Name:</b> Chief Operating Officer, Phillip Eng	
<b>Procurement Type:</b> <input type="checkbox"/> Competitive <input type="checkbox"/> Non-competitive <input checked="" type="checkbox"/> Various	<b>Contract Manager:</b> Chief Procurement Officer, David N. Ross	
<b>Solicitation Type:</b> <input type="checkbox"/> RFP <input type="checkbox"/> Bid <input checked="" type="checkbox"/> Other: Various		

### **PURPOSE:**

This is a request that the Board ratify procurement actions awarded pursuant to Executive Order 168 ("E.O. 168") and its extensions.

### **DISCUSSION:**

On June 29, 2017, Governor Andrew M. Cuomo issued Executive Order No. 168, in which he declared a disaster emergency as a result of continued failures of tracks, signals, switches and other transportation infrastructure on MTA rail and subway systems and resulting outages, derailments, and service disruptions that have had a deleterious effect on MTA customers and the regional and New York State economy. The Governor declared that significant and immediate action must be taken to assist in the repair of such transportation infrastructure, and in remediation of track outages and service disruptions. E.O. 168, as extended, provides for the temporary suspension of statutory provisions and any implementing rules, regulations and guidelines for purposes of awarding any contracts, leases, licenses, permits or other written agreements to mitigate the disaster emergency.

Since time is of the essence in addressing the disaster emergency, the procurement actions listed in Attachment 1 were procured without a formal competitive process. In accordance with the emergency provisions in Article III(B)(1) of the All Agency General Contract Procurement Guidelines and Article III(C)(3) of the All Agency Service Contract Procurement Guidelines, the E.O. 168 procurement actions listed in Attachment 1 are being submitted to the Board for ratification. The total estimated value for the four actions is \$12,035,428. All four actions are for NYC Transit. Three of the four actions were conducted using informal competition.

One action is a non-competitive, five-year, contract for ultrasonic rail testing services. The contractor, using NYC Transit's existing ultrasonic test equipment, detects and verifies internal flaws that can develop in rails, thereby facilitating preemptive track repairs. This test equipment was originally developed and manufactured by DAPCO Technologies, LLC (DAPCO). The awardee, DPR Ultrasonic Technologies, LLC (DPR), is the only qualified contractor who has the requisite expertise to provide the full complement of ultrasonic testing services required by NYC Transit, including support of the existing equipment. DPR is owned by the former principal of DAPCO. A cost analysis was performed using certified cost data provided by DPR.

Pricing for all four actions was found to be fair and reasonable.

**Attachment 1**  
**Executive Order 168 Procurement Actions**

<u>Award Date</u>	<u>Contract #</u>	<u>Description</u>	<u>Contractor</u>	<u>Solicitation Method</u>	<u>Value</u>
11/1/2017	NYCTA 19339	Ultrasonic rail testing services to detect rail flaws including maintenance and repair of the NYCT owned equipment used to conduct said services.	DPR Ultrasonic Technologies, LLC	Non-competitive	\$10,352,334
11/6/2017	NYCTA 19228	Two (2) Railcar movers to move subway cars and work equipment within NYCT's maintenance yards.	Railquip, Inc	Informal Competition	\$431,843
11/14/2017	NYCTA CMM-1463B	Additional emergency medical technicians to aid sick subway passengers and reduce associated subway delays.	TemPositions Health Care, Inc.	Informal Competition	\$990,000
11/14/2017	NYCTA 19397	Coil for air conditioner condenser assembly	Bombardier Mass Transit Corp.	Informal Competition	\$261,251
				Total	\$12,035,428



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## Schedule G: Miscellaneous Service Contracts

Item Number: G

<b>Vendor Name (&amp; Location)</b> Waterfall Security Solutions, Ltd.	
<b>Description</b> Unidirectional Security Gateway Expansion & Upgrade	
<b>Contract Term (including Options, if any)</b> 41 months	
<b>Option(s) included in Total Amount?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
<b>Procurement Type</b> Competitive <input checked="" type="checkbox"/> Non-competitive <input type="checkbox"/>	
<b>Solicitation Type</b> RFP <input type="checkbox"/> Bid <input type="checkbox"/> Other: Sole Source <input checked="" type="checkbox"/>	

<b>Contract Number</b>	<b>AWO/Modification #</b>
<b>Renewal?</b>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<b>Total Amount:</b>	\$498,160
<b>Funding Source</b> <input checked="" type="checkbox"/> Operating <input type="checkbox"/> Capital <input type="checkbox"/> Federal <input checked="" type="checkbox"/> Other	
<b>Requesting Dept/Div &amp; Dept/Div Head Name:</b> Procurement & Material Management, Al Muir, Sr. Director	

### Discussion:

#### I. PURPOSE/RECOMMENDATION:

Approval is requested for a non-competitive miscellaneous 41 month service agreement in the not to exceed amount of \$498,160 with Waterfall Security Solutions, Ltd. (Waterfall) for the expansion and upgrade of the unidirectional data-flow security.

#### II. DISCUSSION:

The scope of work includes the upgrading of the MNR Waterfall Security Solutions currently used to enable secure data transfer for the MNR Protection System as well as hardware and software maintenance. The new version of the Waterfall Security Solutions support additional network application protocol data to flow from a secured environment to a less secure environment. This unidirectional data flow will enable Security Administrators to secure mission-critical systems against Cyber-attacks. As a result, it will prevent cyber attackers from accessing the mission-critical systems.

In an effort to evaluate cyber security throughout the MTA, MTA-IT secured the services of AECOM, an industry leader in cyber security, to perform a threat, vulnerability, and risk assessment (TVRA) of MNR's systems. MNR's evaluation was one of the first completed after conducting the comprehensive security threat review in July 2017. As a result of this study, AECOM recommended the implementation of the upgraded Waterfall Security Solutions to protect the systems at MNR. In the same report, AECOM noted that the Waterfall gateways provide the best methods of protection when connecting multiple networks by eliminating all possible means of communicating into the systems using one-way optical signals. In addition, Waterfall's solution is designed to ensure security and can be deployed in redundant configurations for high levels of system availability. Waterfall's approach to unidirectional gateways is unique from a cyber-security point of view, these components provide a unique application-layer approach that inspects and filters all data that enters and leaves the gateways. This unique benefit eliminates one of the most common attack techniques where malicious communications are "piggy-backed" on normal traffic. This upgrade will also allow MNR to provide real-time data to MTA-IT for security monitoring. There were two other companies in the market that provide unidirectional services, both were contacted and were unable to secure the specific network application protocols used by MNR. Waterfall possesses capabilities that no other vendor can provide and MTA – IT Security and its consultant strongly support this non-competitive award.

A cost proposal was solicited from Waterfall and received in the amount of \$1,112,250 and negotiated to \$498,160. This reduction is directly related to a refinement of the proposed scope which resulted in a reduction of \$614,090 and is 7% less or (\$37,094) than the Engineer's estimate of \$535,254 and therefore deemed to be fair and reasonable. Waterfall does business with both government and commercial entities and is providing MNR with a very favorable and discounted pricing as a government entity for these services.

MNR completed a responsibility review of Waterfall Security Solutions as defined in the All Agency Responsibility Guidelines in connection with this award recommendation, which yielded no significant adverse information (SAI).

**III. D/M/WBE INFORMATION:**

The MTA Department of Diversity and Civil Rights assigned 0% MBE/WBE Goals to this Procurement

**IV. IMPACT ON FUNDING:**

The expansion & software upgrade in the amount of \$498,160 (base = \$391,300, maintenance = \$106,860) will be completed in 41 months and is to be funded by the MNR Operating Budget.

**V. ALTERNATIVES:**

There are no available alternatives to Waterfall proposed system upgrade. MNR does not have the resources or technical skill level necessary to upgrade and maintain the Waterfall systems.



# Staff Summary

Item Number C					
Dept. & Dept. Head Name: Procurement & Material Management, Al Muir, Sr. Director					
Division & Division Head Name: Executive Vice President – Catherine Rinaldi					
Board Reviews					
Order	To	Date	Approval	Info	Other
1	M-N Comm.Mtg.	12-11-17	X		
2	MTA Board Mtg.	12-13-17	X		
Internal Approvals					
Order	Approval		Approval		
X	Acting President	X	Sr. V.P. Operations		
X	V.P. Finance & IT	X	V.P. & General Counsel		
X	V.P. Capital Projects				

SUMMARY INFORMATION	
Vendor Name Tomex Electronics, Inc.	Contract Number 1000058051
Description Design, Furnish, Deliver and Integrate Metro-North's Security Systems	
Total Amount \$18,730,572	
Contract Term (including Options, if any) 32 Months	
Option(s) included in Total Amount? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	
Renewal? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	
Procurement Type <input checked="" type="checkbox"/> Competitive Non-competitive	
Solicitation Type <input checked="" type="checkbox"/> RFP Bid Other:	
<input checked="" type="checkbox"/> Operating <input checked="" type="checkbox"/> Capital Federal Other:	

## Narrative

### I. PURPOSE/RECOMMENDATION:

Approval is requested to award a 32-month competitively solicited and negotiated contract (RFP process; three proposals received; two technically non-compliant; one short-listed) to Tomex Electronics, Inc. (Tomex) to design, furnish, deliver, install, test and integrate new security systems. This contract is an integral part of the multi-part, multi-phase Customer Service Initiative (CSI) in Grand Central Terminal (GCT), and other outlying passenger stations and facilities. The various CSI projects are being implemented in a coordinated manner to improve and upgrade the level and quality of information being provided to MNR customers.

### II. DISCUSSION:

MNR currently manages a variety of integrated and stand-alone Video Surveillance System (VSS) throughout the operating territory. At Grand Central Terminal (GCT), over 300 cameras are monitored and additional camera feeds are provided by outlying stations including 125<sup>th</sup> Street, Yankees 153<sup>rd</sup> Street, Yonkers, Tarrytown and Fordham from the Security Control Center (SCC).

The CSI projects will provide an infrastructure that will support the ultimate expansion of video surveillance systems and access control to all stations and facilities, efficiently distribute video to all authorized users across the enterprise network, centralize all video system administration, management and distribution in the SCC, and most importantly, centralize control and command functions to the SCC including Video Surveillance monitoring, elevator/escalator real-time status alarm indications, access control and monitoring of fire alarms and intrusion detection systems.

The subject contract is to design, furnish, deliver, install, test and integrate a security system. Major elements of the contract include:

- New Security Network System, including integration with existing networks.
- New Head End / Physical Security Infrastructure Management System, including integration with existing systems.
- New Elevator/Escalator Maintenance System (EEMS), including integration with new localized equipment used to communicate with remote elevators and escalators in real-time to maintenance and the public.



# Staff Summary

- d) Integrate the existing Video Surveillance System (VSS) cameras, access control systems and intercoms to the existing SCC including those from the all-agency security system into the new system.
- e) New VSS, including integration with existing video management systems;
- f) Access Control System, including integration with existing access control systems;
- g) Intercom System, including integration with existing intercom systems;
- h) SCC Equipment Room equipment.
- i) Backup SCC equipment (to be temporarily housed in the SCC equipment room for the purposes of this contract)
- j) Security Monitoring and System Administration Workstations and associated user account setup.

In April 2016, the Board approved use of the Request for Proposal (RFP) process. An RFP, dated May 9, 2017, was prepared and advertised in the New York State Contract Reporter, New York Post, El Diario, Daily Challenge and posted on MNR's website. Prior to the formal solicitation, an Expression of Interest was sent to known security firms. In addition, MNR's Procurement and Communication and Signal Departments conducted a direct outreach to the vendor community.

The selection criteria established in the RFP was as follows:

1. Cost.
2. Technical Capability: Ability to provide technical services, equipment and systems as required in the RFP, included but not limited to quality and completeness of the required engineering, testing, training and documentation.
3. Project Plan: Proposer's demonstrated ability to manage and coordinate the work in the RFP.
4. Experience: Identified previous work over the last 10 years similar to the requirements of the RFP. Demonstrated qualifications and availability of key personnel, including a commitment that the key resources remain constant throughout the project, including subconsultant/subcontractor services.
5. Diversity practices: Evaluation of the diversity practices of the proposer.

On August 2, 2017, the Selection Committee (SC) comprised of members representing MNR's Procurement and Material Management, M of W Communications and Signals, and Safety Departments met to review the initial technical and cost proposals from three firms: Tomex, Schneider Electric Buildings Americas, Inc. and Securitas Electronic Security. After the initial review by the SC, it was determined that there remained multiple ambiguities in the RFP responses and that further clarifications were warranted by all three proposers.

On August 8, 2017, clarification requests were sent to the three firms that submitted proposals. On August 18, 2017, Tomex and Securitas responded to the requested clarifications. Schneider was provided an opportunity to clarify its proposal however elected to not address the technical shortcomings in their proposal. The SC deemed them to be non-responsive and no longer considered them for this project. After reviewing the revised proposals for technical and commercial compliance, it was determined that despite the request for clarification, Securitas continued to take exceptions to the technical scope of work. Securitas did not furnish all the requested technical information, omitted pricing for several line items and took numerous exceptions to the scope of work, including not providing a fully integrated system. In addition, Securitas failed to adequately describe their project plan to address the integration portion of the work scope. Securitas was given multiple opportunities to address these shortcomings but failed to do so and was determined to be non-responsive to the RFP.

The SC determined that Tomex's proposal was technically responsive and Tomex was invited in to discuss their proposal in greater detail. Tomex's proposal was submitted in the amount of \$16,825,849 for the base sixteen station package. The MNR Engineers estimate was \$13,424,353. The disparity between the Engineer's estimate and Tomex's proposal was determined to be scope that was added by MNR during the clarification stage but was not reflected in the Engineers estimate. In addition, the MNR estimate understated the total amount of effort needed to fully integrate the new system with the preexisting systems. Following these discussions, the SC, in consultation with key MNR leadership recommended

# Staff Summary

refining the scope of this 16 station project (Port Chester, Rye, Harrison, Mamaroneck, Larchmont, New Rochelle, Pelham, Mt. Vernon East, Tremont, Melrose, Harlem 125<sup>th</sup> St., Morris Heights, Spuyten Duyvil, Riverdale, Tarrytown, and Ossining). These revisions were necessary as the initial cost proposal exceeded MNR's original project budget. It was determined that the final station selection should coincide with those stations previously identified under the CSI program. In an effort to achieve further cost reductions Tomex was provided written clarifications to the scope of work reflecting alternative equipment, project allowances and reduction in the recommended spare parts for reliable operation. Alternate equipment and allowances were identified in the base scope of work.

On September 28, 2017, Tomex submitted its revised cost proposal in the amount of \$14,599,164 for the base scope of services and \$1,531,408 for five years of maintenance. MNR elected to incorporate five years of maintenance to receive the economies of the design team maintaining the new system. Future maintenance for this system can be provided through a competitively solicited systems integrator contract that would not be bound to any one specific manufactured product and will be competitively solicited after the initial five year period. The final agreed upon cost of \$14,599,164 for the base work and \$1,531,408 for five years of maintenance is deemed to be fair and reasonable.

In addition to the base work noted above, MNR is currently developing the work scopes for four additional stations: Poughkeepsie, Southeast, Nanuet and Harriman. Preliminary pricing has been included in the not to exceed amount of \$2,600,000. The final contract pricing for these stations will be negotiated and finalized when the design is in sufficient detail to ensure fair and reasonable pricing.

MNR completed a responsibility review of Tomex as defined in the All Agency Responsibility Guidelines in connection with this award recommendation which yielded no significant adverse information (SAI). A responsibility review is currently being performed on all subcontractors whose scope of work was proposed to be in excess of \$1,000,000. No significant adverse information was found during those reviews.

### **III. D/M/WBE INFORMATION:**

The MTA Department of Diversity and Civil Rights (DDCR) established a 15% MBE and 15%WBE goal for this project. Tomex's pre award M/WBE submittal package is currently under review by DDCR. The contract will not be awarded until DDCR requirements have been satisfied.

### **IV. IMPACT ON FUNDING:**

Board approval is requested in the amount of \$17,199,164 (the 16 base stations plus four additional stations). In addition, MNR is also requesting a not to exceed amount of \$1,531,408 for 5 years of maintenance to be approved at this time. These services are to be provided on an as needed basis, as well as scheduled maintenance. This procurement is to be funded by the 2015-2019 Capital Program and MNR's Operating Budget (maintenance).

### **V. ALTERNATIVES:**

MNR does not have the available in-house staff with both the expertise and capability to perform the required design and construction services as specified. Notwithstanding MNR failing to receive other technically compliant proposals despite a broad vendor outreach, it was determined that it would not be advantageous to resolicit this project. Adopting a design-bid-build approach would require additional costs to finalize a design and would greatly delay the overall implementation of the CSI project.

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## Staff Summary



Long Island Rail Road

Page 1 of 4  
12/016/17

Item Number: 2					
Dept & Dept Head Name: Procurement & Logistics, Dennis Mahon					
Department Head Signature & Date <i>[Signature]</i>					
Division & Division Head Name: Engineering, SVP Bruce Pohlot					
Division Head Signature & Date <i>[Signature]</i>					
Board Reviews					
Order	To	Date	Approval	Info	Other
1	LI Committee	12.11.17			
2	MTA Board	12.13.17			
Internal Approvals					
Order	Approval	Order	Approval		
6	President <i>[Signature]</i>	3	SVP Engineering <i>[Signature]</i>		
5	Executive VP <i>[Signature]</i>	2	VP & CFO <i>[Signature]</i>		
4	SVP Operations <i>[Signature]</i>	1	VP General Counsel & Secretary <i>[Signature]</i>		

SUMMARY INFORMATION	
Vendor Name	Contract Number
3rd Track Constructors	6240
Description Design/Build Services for Long Island Rail Road Expansion Project	
Total Amount	
\$1,813,174,918.25	
Contract Term (including Options, if any)	
Up to 2,355 consecutive calendar days (Base Work plus Completion Scope and Garages Scope)	
Options(s) included in Total Amount: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Renewal? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Procurement Type	
<input checked="" type="checkbox"/> Competitive <input type="checkbox"/> Non-Competitive	
Solicitation Type	
<input checked="" type="checkbox"/> RFP <input type="checkbox"/> Bid <input type="checkbox"/> Other:	
Funding Source	
<input type="checkbox"/> Operating <input checked="" type="checkbox"/> Capital <input type="checkbox"/> Federal <input type="checkbox"/> Other:	

**I. PURPOSE/RECOMMENDATION:**

The Long Island Rail Road (LIRR) requests Board approval for MTA Capital Construction Company (MTACC) to award a Public Works contract to 3<sup>rd</sup> Track Constructors (3TC) in the total amount of \$1,813,174,918.25 to provide Design-Build Services for the Long Island Rail Road Expansion Project (the "Project"). As set forth in greater detail below, the total amount includes Base Contract Work in the amount of \$1,457,117,009.99, and options for a completion scope of work (the "Completion Scope"), in the amount of \$270,608,499.00, and a garages scope of work (the "Garage Scope"), in the maximum combined amount of \$85,449,409.26.

The scope of work for the Project includes the construction of approximately ten miles of third track, including third rail, ties, switches, cable, signal equipment, utility poles and other items needed to support railroad operations, and the elimination of seven street-level train crossings ("grade crossings") between Floral Park and Hicksville in Nassau County, New York. In addition, the project includes construction of up to 5 parking garages, construction of retaining walls, utility relocation, fencing, station improvements and construction of new station platforms, along with measures to reduce impacts on adjacent communities such as sound attenuation barriers and landscaping.

**II. DISCUSSION:**

The LIRR Project is a transformative improvement to the LIRR system. It will expand capacity, improve reliability, improve safety by eliminating all grade crossings along the Project corridor, and allow for bi-directional service at all times during the day. In addition, the Project will improve quality-of-life in adjacent communities by improving the appearance and functionality of stations within the corridor, reducing noise through the use of noise attenuation walls and reducing air pollution and eliminating wait time associated with idling vehicles at grade crossings.

Following finalization of the Draft Environmental Impact Statement, this Board approved the use of a "Request for Proposal" (RFP) process for this procurement at the November 2016 meeting and LIRR initiated a two-step RFP process. In Step 1, interested Design/Build teams submitted background materials outlining their teams and qualifications in response to a publicly-advertised



## **Staff Summary**



Request for Qualifications (RFQ). These submissions were evaluated, and the four qualified proposer teams were invited to participate in a lengthier Step 2 proposal process. One proposing team dropped out at this phase and did not further pursue this project. The three remaining proposing teams were: 3<sup>rd</sup> Track Constructors (a Joint Venture of Dragados USA, Inc., John P. Picone, Inc., Halmar International LLC, and CCA Civil, Inc.); Skanska Kiewit Posillico JV (composed of Skanska USA Civil Northeast Inc., Kiewit Infrastructure Co., and Posillico Civil, Inc.); and Tutor Perini / O&G JV (composed of Tutor Perini Corporation and O&G Industries, Inc.). During Step 2, these three teams received conceptual design documents, technical specifications, and other related information and were asked to submit technical and price proposals. Proposers were requested to specifically identify innovative approaches to minimize construction impacts on surrounding communities, improve functionality and aesthetics, and shorten the construction schedule, among other objectives. Each of the three teams submitted proposals.

Technical advisory teams which included staff from LIRR, MTACC, MTAHQ, and NYSDOT reviewed the proposals and assessed their strengths and weaknesses. These assessments were then shared with a Selection Committee which included representatives from LIRR, MTACC, MTAHQ, the NYS Thruway Authority, a former Long Island State Senator, and the private sector. In addition, each of the proposers made oral presentations to the Selection Committee.

In as much as community involvement has from the outset been an integral element of this project, representatives from the Villages of Floral Park, Garden City, New Hyde Park, Mineola, and Westbury were given the opportunity to review select elements of the technical proposals and provide written comments which were shared with the Selection Committee.

Based on the written proposals, the assessments of the technical advisory teams, the oral presentations, and the information generated by the Villages, the Selection Committee evaluated each of the proposals in accordance with the Technical Criteria established in the RFP, which included the following categories: Management Approach; Project Design; Schedule and Construction Impact Mitigation; Financial Strength; and Diversity Practices and Plan. The results of this evaluation ranked the Proposers in the following order, high to low:

- 3<sup>rd</sup> Track Constructors (3TC)
- Skanska Kiewit Posillico
- Tutor Perini / O & G.

Price proposals were evaluated by a separate Price Evaluation Committee comprised of LIRR estimating and project management personnel, which analyzed the proposals for all three Proposers, factoring into the total price offerings any savings/extra costs that would be incurred by LIRR for necessary Force Account support and other Project support costs. However, neither the price proposals nor the analysis of the Price Evaluation Committee was shared with the Selection Committee until the Selection Committee had completed its technical evaluations.

Thereafter, a team comprised of representatives of MTACC, LIRR and MTAHQ met with each of the Proposers individually to discuss ways to reduce costs, and LIRR subsequently issued a formal request for revised proposals to all three Proposers. Moreover, in order to contend with budgetary constraints, as all of the initial proposals exceeded the budget for this Contract, the Proposers were asked to identify work that could be accomplished with the funds available for this Project in the 2015-2019 Capital Program (the "Base Work") and the remaining work (the Completion Scope) which will require funding in the 2020-2024 Capital Program. Proposers were also asked to take into account schedule, such that assuming the Completion Scope is timely started, the Project's 4-year construction schedule would not be jeopardized. Moreover, construction of certain of the parking garages were scoped separately ("Garage Scope") to allow for potential co-development opportunities and/or the opportunity to fund them in the 2020 – 2024 Capital Program.

Revised proposals were received from all three Proposers and were provided to the Selection Committee, which, granting equal weight to the technical and price proposals, selected 3TC as the firm offering the overall "best value."

Some of the factors that favored the 3TC proposal were:

- A well-developed communications outreach program;
- An innovative design that minimizes track and system work required by LIRR forces, simplifies the work at crossover locations, significantly reduces the amount of signal modification work, substantially reduces the number of required PSEG power poles, and, significantly, requires far fewer weekend outages than anticipated

## **Staff Summary**



- The use of “U” shaped sub-structure elements which will reduce the track outage time needed to install new bridges;
- The use of eight-car temporary platforms, rather than the RFP-required length of six cars, which will help prevent crowding on platforms;
- The use of Autonomous “VIA” shared ride technology to provide access between LIRR stations and alternate parking provided during construction; and
- The use of Agtek 3D software to minimize required excavation and embankment, optimizing material and equipment resources and reducing material hauling, equipment noise, pollution, and vehicular traffic.

At the direction of the Selection Committee, negotiations with 3TC began and agreement was reached at the following amounts:

- Base Work: \$1,457,117.009.99
- Completion Scope : \$270,608,499.00
- Garage Scope: Construction of up to 4 garages at Mineola Second Street, Westbury North, Westbury South, and Hicksville, totaling up to \$85,449.409.26.

The Third Track Project will be operational by late 2022 (assuming Completion Scope is initiated by July 2020).

LIRR and all MTA Agencies follow the MTA All-Agency Responsibility Guidelines which prescribe a thorough review of various databases, repositories and media to assess any information that may have bearing in determining a prospective vendor’s responsibility. External sources include, but are not limited to, LexisNexis, Westlaw, Dun & Bradstreet, and Google. Internal sources include Vendex, MTA All-Agency ACE Report, and the Debarred List. Utilizing these sources, LIRR completed a responsibility review of all members of 3TC. These firms were found to be responsible by the MTA in the recent past notwithstanding significant adverse information (SAI), for which MTA “Waiver of Significant Adverse Information” memos were executed, pursuant to the All-Agency Responsibility Guidelines. No new SAI has been found relating to these firms and therefore 3TC has been found to be responsible.

This item seeks authorization from the Board to award a Public Works contract to 3TC for Design-Build Services necessary for the design, construction and installation of the Project as described above, and for its inclusion in the current MTA “Owner-Controlled Insurance Program” (OCIP). Upon approval by the Board, a notice of award for such contract will be issued by MTACC to 3<sup>rd</sup> Track Constructors and MTACC will execute and administer the contract, with ongoing involvement of LIRR Engineering, Program Management, and various operating and administrative staff as part of an integrated project team through Project completion.

This item also seeks authorization from the Board to enter into several related agreements between LIRR and third parties, necessary to effectuate the design, construction and installation of the Project. These agreements include, among others, the following:

(1) Memoranda of Understanding with Municipalities – In keeping with the LIRR’s pledge of a robust public outreach program to secure support for the Project, and of actively working together with communities to address concerns about the potential impacts of the Project on local quality of life, LIRR will enter into Memoranda of Understanding with each of the five Villages located along the Project corridor (Floral Park, New Hyde Park, Garden City, Westbury and Mineola), formalizing LIRR’s commitment to ensure that the chosen Design-Builder will implement various mitigation measures identified in the Final Environmental Impact Statement for the Project to address such concerns. Virtually all of the commitments reflected in the MOU’s such as community outreach, noise and vibration monitoring, sound attenuation walls, alternate parking during construction, environmental compliance, work site housekeeping, and work zone traffic control plans are already incorporated within the overall scope of the Project and the costs thereof are included within the contract prices quoted by 3TC. The MOU’s provide the Villages with the right to hold LIRR and our Design-Build Team accountable to deliver on these commitments. In some instances, there are a small number of Village-specific items called out in the MOUs that are not part of the Project, such as aesthetic improvements at the Floral Park station (improved lighting, benches, railings and signage/wayfinding). These Village-specific items are estimated to cost no more than approximately \$1 million in the aggregate. Two (2) Memoranda of Understanding have already been executed with the Villages of Floral Park and New Hyde Park in the Spring of 2017, in connection with securing the support of such Villages for amendment of the current MTA Capital Program (2015-2019) to include funding for the Project. The authorization being sought from the Board therefore includes a request to ratify the execution of such Memoranda of Understanding.

## **Staff Summary**



Page 4 of 4  
12/7/17

(2) Memorandum of Understanding with the New York State Department of Transportation (“NYSDOT”) – To accelerate the design and construction of the Project, it will be necessary to secure various interests in real property, primarily for the purpose of eliminating the seven grade crossings along the Project corridor. NYSDOT has offered to assist LIRR by acquiring these interests, preferably through negotiation but utilizing its power of eminent domain if negotiations are not successful. The Public Authorities Law authorizes NYSDOT to assist MTA and its agencies in this manner, and such assistance is valuable because NYSDOT’s process to acquire property by eminent domain is simpler and faster than MTA’s own process. This Memorandum of Understanding will memorialize NYSDOT’s agreement to assist LIRR in this manner, and will also memorialize NYSDOT’s commitment, at the direction of the State, to transfer \$450 million to MTA to cover the costs of such grade crossing eliminations along the corridor, including property acquisition.

(3) Drainage and Parking Agreements – Five of the seven contemplated grade crossing eliminations will depress existing roadways so that they pass under LIRR’s right of way. This will generate stormwater runoff that must be collected and disposed of, likely by way of pumping and/or piping the stormwater to an adjacent municipal storm sewerage system, or by in-ground disposal on an adjacent piece of property. In either case, agreements may be required with the County of Nassau and/or local towns or villages, to allow the necessary pumps and pipes to be installed under public streets and to accept the stormwater at municipally owned recharge basins for disposal. In addition, the Project contemplates the construction of parking facilities in certain municipalities to provide additional parking for LIRR commuters, as well as to address local concerns about loss of parking as a result of the Project. These facilities will either be located on LIRR property or on municipally-owned property, and agreements may be required to allow LIRR to construct such facilities on the latter, and to provide for proper operation and maintenance of such facilities when built.

### **III. D/M/WBE INFORMATION:**

The MTA Department of Diversity and Civil Rights (DDCR) has established MBE, WBE and SDVOB participation goals for this procurement at 15%, 15% and 6%, respectively. DDCR is awaiting the submission of 3TC’s complete MBE/WBE Utilization Plan. An award will not be made until DDCR approval has been obtained. A review of each JV participant’s past MBE/WBE and DBE performance has revealed that John P. Picone, Inc. and Halmar International have achieved the MBE/WBE or DBE goals on previous MTA contracts. Dragados USA and CCA Civil have not completed any MTA contracts; therefore, no assessment of these firms’ MBE/WBE or DBE performance can be made at this time.

### **IV. IMPACT ON FUNDING:**

This contract will be funded under the 2015-2019 Capital Program and the 2020 – 2024 Capital Program. In 2015 – 2019, funding is available in the MTA Capital Construction (MTACC) portion of the Capital Program under the existing project G7130101. Additionally, the Program is being amended to transfer \$100 million to the Project from various other LIRR projects with scopes of work similar to specific elements of the Project, including: a new parking facility and power substation replacement as well as investments in track, bridge, signal and communications pole and Right of Way improvement. The transfer of these funds to support like investments in the Project will not adversely impact system safety or service reliability. Further, MTA CC will work with the private sector and local municipalities to seek public private partnership funding opportunities for construction of parking garages along the corridor.

### **V. ALTERNATIVES:**

There are no alternatives to awarding this design build contract, as neither LIRR nor MTACC have the ability to undertake the design and construction of this entire project with in-house forces. Without this contract award, this project will not progress and this critical improvement that the LIRR has sought for decades will fail to be accomplished. Reliability will continue to suffer along the Main Line and as a result and the full benefit of the East Side Access project will not be realized. The delays experienced by 40% + of LIRR ridership will continue to plague commuters and gate downtime along the congested north / south roadways will increase along with air pollution from auto exhaust and noise from horn soundings and gate activations generated by additional train traffic traversing the corridor.

RESOLUTION  
BOARDS OF THE  
METROPOLITAN TRANSPORTATION AUTHORITY,  
THE LONG ISLAND RAIL ROAD COMPANY,  
and MTA CAPITAL CONSTRUCTION COMPANY

WHEREAS, the Long Island Rail Road Company (“LIRR”), a New York State public benefit corporation and an operating agency of the Metropolitan Transportation Authority (“MTA”), desires to advance its Main Line Expansion Project (the “Project”); and

WHEREAS, the Project consists generally of the construction of approximately ten miles of third track, including third rail, ties, switches, cable, signal equipment, utility poles and other items needed to support railroad operations, and the elimination of seven street-level train crossings (“grade crossings”) between Floral Park and Hicksville in Nassau County, New York; and

WHEREAS, in addition, the Project includes construction of up to 5 parking garages, construction of retaining walls, utility relocation, fencing, station improvements and construction of new station platforms, along with measures to reduce impacts on adjacent communities such as sound attenuation barriers and landscaping; and

WHEREAS, the Project will be a transformative improvement to the LIRR system, expanding capacity, improving reliability, improving safety by eliminating all seven at-grade crossings along the Project corridor, and allowing for bi-directional service at all times during the day; and in addition, the Project will improve quality-of-life in adjacent communities by improving the appearance and functionality of stations within the corridor, reducing noise through the use of noise attenuation walls and reducing air pollution and eliminating wait time associated with idling vehicles at grade crossings; and

WHEREAS, pursuant to Section 1265-a of the Public Authorities Law and the MTA’s All-Agency Procurement Guidelines, LIRR may, in appropriate circumstances where competitive bidding is impractical or inappropriate, request approval from the Board to utilize the Request for Proposals (“RFP”) procurement method to award a public works contract; and

WHEREAS, the Board previously approved LIRR’s utilization of the RFP procurement method to select and engage a contractor to provide Design-Build Services for the Project; and

WHEREAS, as described in the Staff Summary presented to the Board at its December 2017 meeting, LIRR has utilized the RFP procurement method, and a duly constituted Selection Committee has identified 3<sup>rd</sup> Track Constructors (“3TC”) as the proposer responding to LIRR’s RFP offering the best overall value in providing Design-Build Services for the Project; and

WHEREAS, LIRR is requesting that the Boards of the MTA, LIRR and MTA Capital Construction Company (“MTACC”) approve the award of a public works contract by MTACC to 3TC for Design-Build Services for the Project, such contract to be entered into by MTACC

and to be administered by MTACC with the active participation of LIRR, all as more fully described in such Staff Summary;

NOW, THEREFORE, upon recommendation of such Selection Committee, LIRR and MTACC, the Boards of the MTA, LIRR and MTACC resolve as follows:

1. The award of such public works contract by MTACC to 3TC for Design-Build Services for the Project, as more fully described in the Staff Summary presented to this meeting, be and it hereby is, approved.

2. Such public works contract shall take the form of a Design-Build Agreement between MTACC and 3TC, and each MTACC Authorized Officer (as defined below) is hereby authorized and empowered, in the name and on behalf of MTACC, to execute and deliver a Design-Build Agreement with 3TC for Design-Build services for the Project, consistent with such Staff Summary and containing such other terms and conditions as the MTACC Authorized Officer(s) executing such Agreement may approve, such approval to be conclusively evidenced by his/her/their execution thereof.

3. Each LIRR Authorized Officer (as defined below) is hereby authorized and empowered, in the name and on behalf of LIRR, to execute and deliver such Memoranda of Understanding with Municipalities, a Memorandum of Understanding with the New York State Department of Transportation, and Project Drainage and Parking Agreements, consistent with such Staff Summary and containing such other terms and conditions as the LIRR Authorized Officer(s) executing such instruments may approve, such approval to be conclusively evidenced by his/her/their execution thereof.

4. The previous execution and delivery of Memoranda of Understanding between LIRR and each of the Villages of Floral Park and New Hyde Park, consistent with and for the purposes described in such Staff Summary, is hereby ratified.

5. Each MTACC Authorized Officer and each LIRR Authorized Officer is hereby authorized and empowered, in the name and on behalf of MTACC and/or LIRR, as the case may be, to take such other and further actions, and to execute such other agreements and instruments, as may be necessary or desirable to effectuate the purposes and intent of the foregoing resolutions, and the design, construction and installation of the Project pursuant to the Design-Build Agreement executed in accordance with such resolutions. For purposes of Paragraphs 1-4 above and this Paragraph 5, the term "MTACC Authorized Officer" shall mean each of the following: the Chairman, President, Executive Vice President, Sr. Vice President-General Counsel & Secretary, Chief Financial Officer, and any Assistant Secretary of MTACC; and the term "LIRR Authorized Officer" shall mean each of the following: the Chairman, President, Executive Vice President, Vice President-Chief Financial Officer, Vice President-General Counsel & Secretary, and any Assistant Secretary of LIRR.

## Staff Summary



Long Island Rail Road

Page 1 of 2

Item Number:					
Dept & Dept Head Name: Procurement & Logistics, Dennis Mahon					
Department Head Signature & Date					
Division & Division Head Name: Department of Program Management - Paul Dietlin					
Division Head Signature & Date					
Board Reviews					
Order	To	Date	Approval	Info	Other
1	LI Committee	12.11.17			
2	MTA Board	12.13.17			
Internal Approvals					
Order	Approval	Order	Approval		
6	President	3	SVP Engineering		
5	Executive VP	2	VP and CFO		
4	SVP Operations	1	VP/Gen'l Counsel & Sec'y		

SUMMARY INFORMATION	
Vendor Name	Contract Number
Railroad Construction Co	6259
Description New Mid-Suffolk Electric Yard - Design-Build	
Total Amount	
\$107,950,000.00 (lump sum - includes five options).	
Contract Term (including Options, if any)	
852 days	
Options(s) included in Total Amount: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Renewal? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Procurement Type	
<input checked="" type="checkbox"/> Competitive <input type="checkbox"/> Non-Competitive	
Solicitation Type	
<input checked="" type="checkbox"/> RFP <input type="checkbox"/> Bid <input type="checkbox"/> Other:	
Funding Source	
<input type="checkbox"/> Operating <input checked="" type="checkbox"/> Capital <input type="checkbox"/> Federal <input type="checkbox"/> Other:	

## Narrative

**I. PURPOSE/RECOMMENDATION:**

Pursuant to a competitive RFP, Long Island Rail Road requests MTA Board approval to award a firm fixed price contract to Railroad Construction Company, in the amount of \$107,950,000.00 (Base (\$105,699,651.00) + Options (\$2,250,349.00)) to provide Design-Build Services for the New Mid-Suffolk Electric Yard.

**II. DISCUSSION:**

The LIRR requires the services of a design/build contractor to provide design, engineering, and construction services for the construction of a new electric storage yard on Long Island Rail Road owned property located at Ronkonkoma in Suffolk County. With the planned opening of the new East Side Access (ESA) terminal and acquisition of the new M-9 fleet, LIRR anticipates operating additional trains across the LIRR network during the four hour AM peak period. For the Ronkonkoma Branch, the proposed Mid-Suffolk Storage Yard would allow LIRR to increase service during the AM rush by almost 50%, adding 8 westbound trains to the current schedule of 17 westbound trains that arrive at western terminals between 6-10 AM. LIRR estimates that the Ronkonkoma Branch will see an increase of up to 3,000 new AM commuters due to the opening of ESA, in addition to regular growth in LIRR ridership both before and after ESA opens. The additional trains would also benefit riders at other stations in Nassau and Queens County, particularly Hicksville, Mineola, and Jamaica.

In general, the yard will accommodate overnight storage for electric trains, light interior cleaning, toilet servicing, inspection and brake tests, and light maintenance. Work under the contract includes design and construction of a yard lead track, eleven additional yard tracks, new employee welfare and storage facilities, AC/DC substations, signal system, and other associated infrastructure and systems. The new Storage Yard is located adjacent to the south side of the existing Ronkonkoma yard located at the eastern terminus of the electrified main line.

At its October 2016 meeting, the MTA Board approved the use of the "Request for Proposal" method to procure this design-build contract. On July 6, 2017, the "Request for Proposal" (RFP) was publicly advertised. Addenda 1 through 15 were issued to answer vendor queries and extend the due date of proposals. On September 26, 2017, proposals were submitted by six firms: Skanska USA Civil/Posillico Civil ("Skanska/Posillico"), J. P. Picone ("Picone"), Halmar International ("Halmar"), Judlau, LK Comstock, and Railroad Construction Company ("RCC"). Four of the six firms,

## **Staff Summary**



Halmar, Skanska/Posillico, Picone, and RCC were requested to clarify and expand upon their technical proposal with a supplemental oral presentation. [Judlau (\$141,188,534) and LK Comstock (\$181,218,300) were excluded due to cost, their costs exceeded the competitive range and the LIRR estimate by more than 20%.]

On October 23, 2017, the LIRR Technical Evaluation Committee ("TEC") met individually with each of the four remaining firms to hear each firm's oral presentation, discuss and further evaluate the firm's technical capability and to identify proposal items that each firm may wish to consider in their "best and final offer" (BAFO). At the end of the presentations, the TEC team agreed to request BAFOs from three firms, Halmar, Skanska/Posillico, and RCC. Halmar, Skanska/Posillico and RCC were each directed to submit a BAFO addressing technical as well as cost components that together would constitute "best value" to the LIRR.

The BAFO's resulted in each of the three firms reducing their cost proposals as well as reducing the number of calendar days required to complete the work. Although RCC and Halmar both clearly showed their expertise and knowledge in advancing a project of this type, RCC's proposal was \$5,941,536 below the second lowest proposed cost and offered a savings of \$916,281 from its initial proposal. When technical and cost factors are considered, RCC was determined to have presented the "best overall value" to the LIRR for this project. RCC's cost is \$5,941,536 lower than the next lowest proposed total cost and \$9,522,237 or 8% below LIRR's internal estimate, and is therefore considered "fair and reasonable".

A responsibility review was conducted of RCC whereby no adverse or significant adverse information was found. RCC is therefore deemed responsible.

### **III. M/WBE INFORMATION:**

The MTA Department of Diversity and Civil Rights (DDCR) has established MBE and WBE goals for this procurement at 15% and 15%, respectively, and is awaiting the submission of RCC's final MBE/WBE Utilization Plan. An award will not be made until DDCR approval of the MBE/WBE utilization plan is obtained. Railroad Construction Company, Inc. has achieved its MBE/WBE or DBE goals on previous MTA Contracts and indicated on their 11/08/17 BAFO Technical Response that they are fully committed to meeting this goal.

### **IV. IMPACT ON FUNDING:**

This contract will be funded by the LIRR Capital Budget.

### **V. ALTERNATIVES:**

LIRR does not have the ability to undertake the design build services for the construction of the New Mid-Suffolk Electric Yard with in-house forces.

## METROPOLITAN TRANSPORTATION AUTHORITY

WHEREAS, in accordance with Section 1265-a and Section 1209 of the Public Authorities law and the All Agency Procurement Guidelines, the Board authorizes the award of certain non-competitive purchase and public work contracts, and the solicitation and award of request for proposals in regard to purchase and public work contracts; and

WHEREAS, in accordance with the All Agency Procurement Guidelines, the Board authorizes the award of certain non-competitive miscellaneous procurement contracts, and certain change orders to procurement, public work, and miscellaneous procurement contracts; and

WHEREAS, in accordance with Section 2879 of the Public Authorities Law and the All Agency Guidelines for Procurement of Services, the Board authorizes the award of certain service contracts and certain change orders to service contracts.

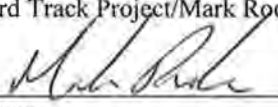

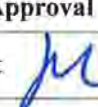


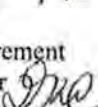
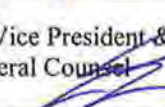
NOW, the Board resolves as follows:

1. As to each purchase and public work contract set forth in the annexed Schedule A, the Board declares competitive bidding to be impractical or inappropriate for the reasons specified therein and authorizes the execution of each such contract.
2. As to each request for proposals (for purchase and public work contracts) set forth in Schedule B for which it is deemed in the public interest to obtain authorization to solicit competitive proposals through a publicly advertised RFP for the reasons specified therein the Board declares it to be impractical or inappropriate to utilize a procurement process inviting sealed bids with award to the lowest responsive/responsible bidder.
3. As to each request for proposals (for purchase and public work contracts) set forth in Schedule C for which a recommendation is made to award the contract, the Board authorizes the execution of said contract.
4. The Board ratifies each action taken set forth in Schedule D for which ratification is requested.
5. The Board authorizes the execution of each of the following for which Board authorization is required: i) the miscellaneous procurement contracts set forth in Schedule E; ii) the personal service contracts set forth in Schedule F; iii) the miscellaneous service contracts set forth in Schedule G; iv) the modifications to personal/miscellaneous service contracts set forth in Schedule H; v) the contract modifications to purchase and public work contracts set forth in Schedule I; and vi) the modifications to miscellaneous procurement contracts set forth in Schedule J.
6. The Board ratifies each action taken set forth in Schedule K for which ratification is requested.



## Staff Summary

Page 1 of 3

<b>Item Number 1</b>						<b>SUMMARY INFORMATION</b>			
<b>Dept &amp; Dept Head Name:</b> Third Track Project/Mark Roche 						<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"><b>Vendor Name</b> Arup - Jacobs Joint Venture</td> <td style="width: 40%; padding: 5px;"><b>Contract Number</b> PS868</td> </tr> </table>		<b>Vendor Name</b> Arup - Jacobs Joint Venture	<b>Contract Number</b> PS868
<b>Vendor Name</b> Arup - Jacobs Joint Venture	<b>Contract Number</b> PS868								
<b>Division &amp; Division Head Name:</b>						<b>Description</b> Project Management Consulting Services for the Long Island Rail Road Expansion Project			
<b>Board Reviews</b>						<b>Total Amount</b> Not-To-Exceed \$99,996,196			
<b>Order</b>	<b>To</b>	<b>Date</b>	<b>Approval</b>	<b>Info</b>	<b>Other</b>	<b>Contract Term</b> Three Years and Two Year Option			
1	LIRR Committee	12/11/17	X			<b>Option(s) included in Total Amount?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A  <b>Renewal?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  <b>Procurement Type</b> <input checked="" type="checkbox"/> Competitive <input type="checkbox"/> Non-competitive  <b>Solicitation Type</b> <input checked="" type="checkbox"/> RFP <input type="checkbox"/> Bid <input type="checkbox"/> Other:  <b>Funding Source</b> <input type="checkbox"/> Operating <input checked="" type="checkbox"/> Capital <input type="checkbox"/> Federal <input type="checkbox"/> Other:			
2	Board	12/13/17	X						
<b>Internal Approvals</b>									
<b>Order</b>	<b>Approval</b>	<b>Order</b>	<b>Approval</b>						
3	Vice President Program Controls 	6	President 						
2	Chief Financial Officer 	5	Executive Vice President 						
1	Chief Procurement Officer 	4	Sr. Vice President & General Counsel 						

**I. PURPOSE/RECOMMENDATION:**

Pursuant to Article X of the MTA All-Agency Service Contract Procurement Guidelines, MTACC seeks Board approval to award a competitively solicited personal service contract (the "Contract") to Arup-Jacobs Joint Venture (the "Arup/Jacobs JV") a joint venture between Ove Arup & Partners P.C. ("Arup") and Jacobs Civil Consultants Inc. ("Jacobs"). The Contract is for Project Management Consulting Services for the Long Island Rail Road Expansion Project (the "Project") in the not-to exceed amount of \$66,818,615 for a period of three years. The Contract also contains options for two additional years for the not-to-exceed amount of \$18,059,922 for the option for year four, and \$15,177,659 for the option for year five. The total not-to-exceed amount of the Contract, including the two options, is \$99,996,196.

**II. DISCUSSION:**

The Project is a transformative improvement to the LIRR system. It will expand capacity, improve reliability, improve safety by eliminating all grade crossings along the Project corridor, and allow for bi-directional service at all times during the day. In addition, the Project will improve quality-of-life in adjacent communities by improving the appearance and functionality of stations within the corridor, reducing noise through the use of noise attenuation walls and reducing air pollution and eliminating wait time associated with idling vehicles at grade crossings.

The scope of work for the Project includes the construction of approximately ten miles of third track, including third rail, ties, switches, cable, signal equipment, utility poles and other items needed to support railroad operations, and the elimination of seven street-level train crossings ("grade crossings") between Floral Park and Hicksville in Nassau County, New York. In addition, the project includes construction of up to 5 parking garages, construction of retaining walls, utility relocation, fencing, station improvements and construction of new station platforms, along with measures to reduce impacts on adjacent communities such as sound attenuation barriers and landscaping.

Under this Contract, the Arup/Jacobs JV will serve as the Project Manager and work as part of an integrated team with MTACC, LIRR, the New York State Department of Transportation and other consultants to manage the Project. The Project Manager will provide services and resources that include, but are not limited to, commercial management, operations management, design compliance oversight, construction compliance oversight, and community outreach.

The Request for Proposal ("RFP") was advertised on August 7, 2017 and the advertisement appeared in the New York State Contract Reporter, the New York Post, Engineering News-Record, Minority Commerce Weekly and on the MTA Website. Seventeen firms requested the RFP document and proposals were submitted by the following entities:

1. AECOM/Gannett Fleming/Tishman Joint Venture
2. Arup – Jacobs Joint Venture
3. Henningson, Durham & Richardson Architecture and Engineering, P.C.
4. LiRo Engineers – WSP, A Joint Venture

The Selection Committee for this Contract consisted of representatives from MTACC and LIRR. Based upon an initial review of the technical proposals, the Selection Committee invited the proposers to supplement their proposals with oral presentations. Each proposer gave an oral presentation to the Selection Committee and, thereafter, the Selection Committee evaluated the technical proposals in accordance with the Source Selection Plan and the established scoring criteria in each of the categories listed below:

- Qualifications and Experience of the Project Director
- Qualifications and Experience of other Proposed Key Personnel
- Proposed Management Approach
- Proposed Technical Approach
- Diversity Practices

Following the evaluation of the technical proposals, the Selection Committee opened the cost proposals which were also scored. The technical and cost scores were then combined to provide the overall final scores from which the Selection Committee unanimously determined that the proposal submitted the Arup/Jacobs JV was the highest ranked and provides the MTA with the overall best value and that the other proposers were not in the competitive range. Accordingly, the Selection Committee recommended that MTACC enter into negotiations with the Arup/Jacobs JV.

Several rounds of negotiations were held with a focus on direct labor rates, overhead and fixed fee. In addition, overhead rates were reviewed by MTA Audit. MTACC's estimate for the work is \$94,048,722 while Arup/Jacob's proposal was \$101,892,445. The parties agreed to the not-to-exceed amount of \$56,818,615 for the base contract with a duration of three years, the not-to-exceed amount of \$18,059,922 for the option for year four, and \$15,177,659 for the option for year five. The total not-to-exceed amount the base Contract and the two options is \$89,996,196.

In addition, MTACC has included in this contract a task order allowance in the amount of \$10 million for additional design services and for the retention of additional professionals with specific expertise that may be required as determined by MTACC. Task orders will be issued for these services as deemed necessary and each task order will be separately negotiated and contain a specific scope of work, budget and schedule.

The Contract will initially be awarded in the not-to-exceed amount of \$66,818,615, which includes the base Contract and the task order allowance. However, MTACC is also seeking Board approval at this time for the full not-to-exceed value, including the two options, of \$99,996,196. The Options will not be exercised until additional funding becomes available through the approved 2020-2024 Capital Program or other sources.

In connection with a previous contract awarded to Jacobs Civil Consultants Inc. ("Jacobs"), Jacobs was found to be responsible notwithstanding significant adverse information pursuant to the All-Agency Responsibility Guidelines and such responsibility finding was approved by the MTA Interim Executive Director in consultation with the MTA General Counsel in April 2013. No new SAI has been found relating to Jacobs and Jacobs was found to be responsible. No significant adverse information was found on Ove Arup & Partners P.C. they were found to be responsible.

### **III. MBE/WBE/SDVOB INFORMATION:**

The MTA's Department of Diversity and Civil Rights ("DDCR") reviewed the requirements of the Contract and after undertaking a thorough analysis established goals of 15% MBE, 15% WBE and 6% SDVOB for this contract based on the nature of the work and the availability of MBEs, WBEs and SDVOBs capable of performing the work. The Arup/Jacobs JV has committed to meeting these goals and has submitted a utilization plan which has been approved by DDCR.

In connection with past experience meeting D/M/WBE/SDVOB goals, Ove Arup & Partners P.C. and Jacobs Civil Consultants, Inc. have achieved their goals on prior contracts.

**V. IMPACT ON FUNDING**

Funding for the base contract is available in the MTACC portion of the MTA's 2015 - 2019 Capital Program. The options will not be exercised until funding is made available in the 2020 – 2024 Capital Program or from other sources.

**VI. ALTERNATIVES**

The alternative would be for MTACC and LIRR to self-perform the services to be provided under this contract; however, neither MTACC nor LIRR have the in-house resources to provide the required services.

**Schedule A: Noncompetitive Purchases and Public Work Contracts**

Item Number: 1

<b>Vendor Name (Location)</b> Plasser American Corp. (Chesapeake, Virginia)
<b>Description</b> Purchase of replacement parts, equipment upgrades, troubleshooting, repair services and training
<b>Contract Term (including Options, if any)</b> Five years
<b>Option(s) included in Total Amount?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> n/a
<b>Procurement Type</b> <input type="checkbox"/> Competitive <input checked="" type="checkbox"/> Noncompetitive
<b>Solicitation Type</b> <input type="checkbox"/> RFP <input type="checkbox"/> Bid <input checked="" type="checkbox"/> Other: Sole-Source

<b>Contract Number</b> RFQ 139819	<b>Renewal?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Total Amount:</b> \$8,497,172 NYCT \$5,028,488 LIRR \$1,656,492 MNR	
<div style="text-align: right;">\$15,182,152 (Est.)</div>	
<b>Funding Source</b> <input checked="" type="checkbox"/> Operating <input type="checkbox"/> Capital <input type="checkbox"/> Federal <input type="checkbox"/> Other:	
<b>Requesting Dept./Div., Dept./Div. Head Name:</b> Department of Subways, Frank Jezycki	

**Discussion:**

It is requested that the Board declare competitive bidding impractical or inappropriate pursuant to Public Authorities Law Section 1209, Subsection 9(b) due to the existence of a single responsible source, and approve the award of a multi-agency estimated quantity contract to Plasser American Corporation ("Plasser") for replacement parts, equipment upgrades, troubleshooting, repair services, and training for various track-work equipment ("equipment") for NYC Transit, Metro-North Railroad ("MNR"), and Long Island Rail Road ("LIRR") with NYC Transit as the lead agency.

All equipment and related sub-systems were manufactured by Plasser or other sub-system suppliers and integrated by Plasser. The equipment is comprised of sophisticated electronic and mechanical devices, tailor-made to perform various functions required for installing, testing, and maintaining each agency's rail system. Plasser is a worldwide leader in the transit and rail industries. Only Plasser has the factory-trained personnel capable of properly troubleshooting the equipment, recommending and/or performing repair work, and training in-house forces in the appropriate repair procedures. Replacement parts will be installed either by Plasser or by trained MTA agency personnel tasked with the responsibility of day-to-day maintenance. Equipment that is unable to be repaired by MTA agency personnel will be repaired by Plasser.

NYC Transit's equipment includes four track geometry cars ("TGC"), two flash butt rail welding units, eight switch and production tampers, and two ballast distributors/regulators. Included in this contract are upgrades to NYC Transit's TGC3/TGC4 cars. These upgrades will include (1) a new video camera system on the TGC3 and new video cameras on the TGC4 that will allow NYC Transit to regularly conduct detailed video inspections of the mainline tracks, and (2) a new platform position measuring system on the TGC3, using lasers to accurately measure the height and gauge of the platform edge to ensure proper clearance for trains in stations. LIRR's equipment includes one track geometry car, three ballast regulators, and four switch/panel tilt transport cars. MNR's equipment includes one ballast regulator, two tampers, and one track stabilizer. All Plasser equipment used by the agencies during the term of this agreement will be covered by this contract.

This contract includes pricing for all three agencies as follows: Plasser parts (\$8.4M) and labor (\$2.4M), upgrades for TGC3/TGC4 (\$4.3M) as described above, and non-Plasser parts (\$92K). Pricing for parts and labor is based on the *Plasser Parts and Service Price List*, published to the industry for which a discount is applied. The MTA agencies receive a greater discount on Plasser parts than any other transit agency in North America. Plasser's initial proposal of \$15,382,318 was reduced to \$15,182,153 through negotiations conducted using input from MTA Audit. Plasser has stated that the MTA agencies are receiving its most favored customer pricing for both parts and service. Prices have been deemed to be fair and reasonable.

This award will not be subject to prior approval by the OSC, as Executive Order 168 has been invoked to expedite the award of the upgrades to TGC3 and TGC4 to ensure that the track geometry cars are equipped with the latest technology to more efficiently support a safe and reliable system.



# Staff Summary



Item Number 2-3			
Division, Department Head Name: SVP Operations Support, Stephen M. Plochochi			
Internal Approvals			
Order	Approval	Order	Approval
1 	Materiel	6 X	Subways
2 X	Law	7 X	CFO
3 X	Budget	8 	EVP
4 X	DDCR	9 	Acting President
5 X	CPM	10	

<b>SUMMARY INFORMATION</b>	
<b>Vendor Names</b>	<b>Contract No.</b>
Parsons Transportation Group	CM-1236
SYSTRA Engineering	CM-1567
<b>Description</b>	
Consulting Services – Design, Procurement, and Construction Support for Communications-Based Train Control and Auxiliary Wayside Signal Systems for the Culver Line (CM-1236) and the 8th Avenue Line (CM-1567).	
<b>Total Amount</b>	\$11,090,258
Culver Line to PTG	\$4,948,157
8th Ave. Line to SYSTRA	\$6,142,101
<b>Contract Term (including Options, if any)</b>	
75 months - Culver Line	
84 months - 8th Avenue Line	
<b>Option(s) included in Total Amount?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Renewal?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Procurement Type</b>	
<input checked="" type="checkbox"/> Competitive <input type="checkbox"/> Noncompetitive	
<b>Solicitation Type</b>	
<input checked="" type="checkbox"/> RFP <input type="checkbox"/> Bid <input type="checkbox"/> Other:	
<b>Funding Source</b>	
<input type="checkbox"/> Operating <input checked="" type="checkbox"/> Capital <input type="checkbox"/> Federal <input type="checkbox"/> Other:	

To obtain Board approval to award two competitively negotiated contracts for Consulting Services – Design, Procurement, and Construction Support for Communications-Based Train Control and Auxiliary Wayside Signal (“CBTC/AWS”) systems for the Culver Line (CM-1236) to Parsons Transportation Group of New York, Inc. in the estimated amount of \$4,948,157 with a term of 75 months, and for the 8th Avenue Line (CM-1567) to SYSTRA Engineering, Inc. in the estimated amount of \$6,142,101 with a term of 84 months. Each contract allows NYC Transit the option to have both consultants propose on additional signals and systems work at established rates. Award of the option(s) for additional signals and systems work will be subject to Board approval.

## DISCUSSION:

NYC Transit is seeking to procure professional services from experienced consultants to (1) engage in the identification of operational needs, (2) assist in both the development of performance and design specifications, and the selection of qualified contractors/suppliers, (3) provide construction management support, and (4) provide technical support during the design, procurement, and construction phases for the CBTC/AWS systems on the Culver Line that runs from West 8th Street to Church Avenue in Brooklyn, and will include wayside CBTC/AWS equipment only as the cars are already equipped with CBTC. The 8th Avenue Line runs from Fulton Street to 59th Street in Manhattan and will include the installation of CBTC carborne equipment on R211 cars and wayside CBTC/AWS equipment. In order to provide the maximum flexibility, Procurement structured the Request for Proposal (“RFP”) so it could result in one award for both projects, or could be split with a selection of different consultants for each line based on their capacity and expertise to perform the work.

A one-step RFP was advertised, which resulted in submittals from three firms: Gannett Fleming Engineers and Architects, PC (“Gannett”); Parsons Transportation Group of New York, Inc. (“PTG”); and SYSTRA Engineering, Inc. (“SYSTRA”).

# Staff Summary

The Selection Committee ("SC") reviewed and evaluated each written technical proposal in accordance with the established evaluation criteria, which included: experience in relevant areas, plan of approach, experience of project team, experience of prime and subconsultant key personnel, current workload of prime and subconsultants, management approach, quality assurance plan, and diversity practices. The SC also participated in oral presentations with all three firms. After oral presentations, the SC recommended two firms for negotiations: PTG and SYSTRA.

Both firms were considered the most qualified teams to perform the work based on their current and past experience in project management and consultant oversight of signal/CBTC and communications projects. The SC concluded that both proposers were essentially of equal technical ability as they both have extensive experience with NYC Transit's CBTC projects. Gannett was not recommended because its technical approach was not as strong as that of the other two firms, specifically with respect to past and current experience with CBTC projects.

After being selected for negotiations, PTG and SYSTRA's cost proposals were opened and evaluated. Negotiations were conducted and focused on hours, hourly rates and overhead rates for prime and subconsultants, and an option for additional signals and systems work was introduced. At the conclusion of negotiations, a request for a Best and Final Offer ("BAFO") was made to both consultants, which included revised price schedules for both Culver and 8th Avenue to reflect fixed labor hours and fixed out-of-pocket expenses to facilitate an equal price comparison and evaluation. Confirmation of rates for option work was also obtained.

BAFOs were received and the table below shows a comparison of the two firms' initial cost proposals and their BAFOs:

	<b>8th Avenue</b>	<b>Culver</b>	<b>Total</b>
<b>Estimate</b>	\$8,934,261	\$6,564,128	\$15,498,389
<b>SYSTRA Initial Proposal</b>	\$13,909,622	\$9,980,756	\$23,890,378
<b>SYSTRA BAFO</b>	\$6,142,101	\$4,496,819	\$10,638,920
<b>PTG Initial Proposal</b>	\$10,305,073	\$6,550,636	\$16,855,709
<b>PTG BAFO</b>	\$6,601,387	\$4,948,157	\$11,127,227

Prior to voting, the SC determined that the resource requirements for both the Culver and 8th Avenue lines were too great for one firm and voted unanimously to award two separate contracts. This also affords NYC Transit the ability to employ the expertise of both consultants in areas of high technical complexity. Both firms were deemed to have strong teams and expertise to perform the work, thus offering the best overall value to NYC Transit. The 8th Avenue Line was the first line to be voted on for selection; SYSTRA received the majority of votes and was recommended by the SC for award based on their involvement in developing the specifications for CBTC carborne equipment on new car fleets. Consequently, PTG was recommended for award of the Culver Line. Procurement finds, and Capital Program Management concurs, that both BAFOs are fair and reasonable based on the competitive nature of the RFP and comparison to the in-house estimate of \$6,564,128 for Culver and \$8,934,261 for 8th Avenue. The cost reductions were achieved by obtaining lower rates from the consultants without any decrease in estimated hours of effort.

SYSTRA's relevant project experience of similar complexity with MTA includes the CBTC Queens Boulevard Line ("QBL") (NYC Transit), Positive Train Control Systems (LIRR/MNR), and St. George Interlocking Modernization (NYC Transit/SIR). PTG is providing construction management services for CBTC signal modernization on the QBL West Phase and the Flushing Line. PTG has also performed similar work related to signals and train control systems that includes such projects as the Second Avenue Subway, Canarsie Line CBTC, Culver Line – CBTC Interoperability Project and Positive Train Control Systems (LIRR/MNR).

One of PTG's significant subconsultants is CH2M Hill New York, Inc. ("CH2M Hill"). In connection with a previous contract, CH2M Hill, was found to be responsible notwithstanding significant adverse information ("SAI") pursuant to the All-Agency Responsibility Guidelines, and such responsibility finding was approved by the MTA Chairman/CEO in consultation with the MTA General Counsel in December 2013. No new SAI has been found relating to CH2M Hill and CH2M Hill has been found to be responsible.

## **M/W/DBE INFORMATION:**

Based on the specialized nature of the work and lack of available firms, the MBE/WBE goals were established by DDCR as 0% MBE and 0% WBE. PTG and SYSTRA have achieved their previous M/W/DBE goals on previous MTA contracts.

## **IMPACT ON FUNDING:**

The contract is 100% MTA funded. Contracts will not be awarded until WAR Certificates are received.

**ALTERNATIVES:**

None. Currently, NYC Transit lacks available in-house personnel to perform the specific tasks required under the scope of work for these contracts.

**CAPITAL PROGRAM REPORTING:**


These contracts have been reviewed for compliance with the requirements of the 1986 legislation applicable to Capital Contract Awards and the necessary inputs have been secured from the responsible functional departments.

**RECOMMENDATION:**

It is recommended that the Board approve the awards of Contracts CM-1236 to PTG for the Culver Line in the estimated amount of \$4,948,157 for a term of 75 months and CM-1567 to SYSTRA for the 8th Avenue line in the estimated amount of \$6,142,101 for a term of 84 months.



# Staff Summary

<b>Item Number 1</b>			
<b>Division, Department Head Name:</b> SVP Operations Support, Stephen M. Plochochi			
			
<b>Internal Approvals</b>			
<b>Order</b>	<b>Approval</b>	<b>Order</b>	<b>Approval</b>
1 WP	Materiel	6 X	CFO
2 X	Law	7 ②	EVP
3 X	Budget	8 OE	Acting President
4 X	CPM	9	
5 X	Subways	10	

<b>SUMMARY INFORMATION</b>	
<b>Vendor Name</b> RFP Authorizing Resolution	<b>Contract No.</b> C-32518
<b>Description</b> Design-Build, Furnish, Install, and Maintain a Platform Barrier Door System at the 3rd Avenue Station on the Canarsie Line, Borough of Manhattan	
<b>Total Amount</b> TBD	
<b>Contract Term</b> 20 Months	
<b>Option(s) included in Total Amount?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<b>Renewal?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<b>Procurement Type</b> <input checked="" type="checkbox"/> Competitive <input type="checkbox"/> Noncompetitive	
<b>Solicitation Type</b> <input checked="" type="checkbox"/> RFP <input type="checkbox"/> Bid <input type="checkbox"/> Other:	
<b>Funding Source</b> <input type="checkbox"/> Operating <input checked="" type="checkbox"/> Capital <input type="checkbox"/> Federal <input type="checkbox"/> Other:	

## PURPOSE:

To request that the Board adopt a resolution declaring that competitive bidding is impractical or inappropriate for a pilot project to Design-Build, Furnish, Install, and Maintain a Platform Barrier Door System at the 3rd Avenue Station on the Canarsie Line, Borough of Manhattan, and that it is in the public interest to issue a competitive Request for Proposal ("RFP") pursuant to Public Authorities Law, Section 1209, Subdivision 9(f). This project will be managed by NYC Transit Capital Program Management.

## DISCUSSION:

NYC Transit is pursuing a more streamlined design and construction strategy for certain types of capital projects as well as alternate project delivery and procurement methods to achieve overall best value and approach for NYC Transit and the public. As a result, this project is part of a Design-Build program within the 2015–2019 timeframe, which promises efficient and faster delivery of projects while achieving best value benefits.

In an effort to improve customer safety, convenience, security, and overall station appearance, NYC Transit has embarked on an initiative to research, study, and pilot a platform barrier door system ("PBDS") in its subway infrastructure. The goal is to improve customer safety by (1) deterring both the occurrence of customers jumping or falling onto the tracks, and unauthorized individuals from gaining track access, and (2) reducing the accumulation of debris on the track. Legacy transit systems, such as those in London and Paris, have retrofitted platforms with barrier systems to create a safer and more comfortable station environment for passengers.

In 2016, NYC Transit commissioned an international study on the state of the PBDS industry. The effort provided NYC Transit with critical information and a greater understanding of the requirements for installing, operating, and maintaining various types of PBDSs. The various types of PBDSs identified in use by various transit agencies are:

1. Platform Screen Doors ("PSD"): full height
2. Automatic Platform Gates ("APG"): half height
3. Rope Platform Screen Doors ("RPSD"): vertically opening gate system



There are a number of challenges involved in installing any of these systems, including their impact on compliance with the Americans with Disabilities Act and New York State Building Codes, where platforms are narrow and are constrained by column and staircase locations. Consequently, in March 2017, a comprehensive study of all 472 stations was started to determine where it would be feasible to install PSDs, APGs, or RPSDs. The pilot will be designed and implemented to assemble data to evaluate and take into account the operational and safety issues for both our employees and our customers.

A study of potential locations was performed, and resulted in the recommendation of the 3rd Avenue Station along the Canarsie Line (Manhattan) to pilot an APG system to be installed during the Canarsie Tube shutdown scheduled to start in 2019. The contract delivery method for this first platform door installation will be via a design-build, furnish, install and maintain contract. The 3rd Avenue Station was selected because the platforms were free of obstructions and will not be in service and therefore, would not disrupt passengers during the Canarsie tube shutdown.

The pilot consists of the installation of APGs measuring approximately 54 inches in height on both platforms at the 3rd Avenue "L" Line (Canarsie) Station. These APGs are built at the platform edge in a continuous line with bi-parting doors coordinated with the location of the train car doors when a train is in the station. Related work includes structural modifications, new construction, architectural, electrical, communications, and APG-related berthing, gap detection, closed-circuit television, and door control systems. The APG system will require the addition of a control room and a spare parts storage room on each platform. The pilot will also include operations training of NYC Transit employees, and options for maintenance and maintenance training.

Selection will be accomplished by using a competitive RFP process. As part of the process, prospective Design-Build teams will propose their design and construction approach, and will be encouraged to provide alternate proposals to NYC Transit requirements in addition to proposed costs. In accordance with MTA policy regarding the use of the Design-Build contracting strategy, a stipend will be paid to Design-Build teams that were not selected, yet provided detailed proposals. This will be done in order to enhance competition and defray proposal costs.

Utilizing the RFP process will allow NYC Transit to evaluate alternatives as well as take into account proposals that can possibly shorten the project duration, and introduce innovations. Compliance with the APG system specifications as well as project schedule will be important requirements. Proposers will also be required to provide prices for an optional maintenance agreement (including hardware and software) to cover the useful life of the system.

Given the complex nature of this pilot project, it is in the best interest of NYC Transit to be able to consider factors such as technical expertise and alternative approaches to the work as well as past performance and experience on similar projects in addition to cost in order to determine which proposal offers the best overall value. Unlike a bid, the RFP process will also allow NYC Transit flexibility to negotiate alternative contract terms and conditions that could potentially result in a lower overall cost for the project while continuing to achieve NYC Transit's requirements.

## **ALTERNATIVES:**

The use of a sealed bid process in which factors other than cost cannot be comparatively considered is not recommended as it does not provide the best flexibility in assessing the alternative means toward accomplishing this complex project. An RFP is a better means to evaluate different technical approaches and to enable the best consideration of alternative proposals.

## **IMPACT ON FUNDING:**

This project is funded by MTA and will be managed by NYC Transit under the MTA Capital Program. Maintenance of the APG system will be funded from the operating budget.

## **RECOMMENDATION:**

That the Board adopt a resolution declaring that competitive bidding is impractical or inappropriate for a pilot project to Design-Build, Furnish, Install, and Maintain a Platform Barrier Door System at the 3rd Avenue Station on the Canarsie Line, Borough of Manhattan, and that it is in the public interest to issue a competitive RFP pursuant to Public Authorities Law, Section 1209, Subdivision 9(f).

# Staff Summary

Page 1 of 2

Item Number 1 (Final)					
Dept. & Dept. Head Name:  Engineering and Construction, Joe Keane, P.E., V.P. <i>Joe Keane</i>					
Division & Division Head Name:  Engineering and Construction, Aris Stathopoulos, P.E. <i>Aris Stathopoulos</i>					
Board Reviews					
Order	To	Date	Approval	Info	Other
1	President	11/27/17			
2	MTA B&T Committee	12/11/17			
3	MTA Board	12/13/17			
Internal Approvals					
Order	Approval	Order	Approval		
1	Chief Financial Officer <i>AK</i>	4	Executive Vice President <i>AK</i>		
2	General Counsel <i>MMT</i>	5	President <i>AK</i>		
3	Chief Procurement Officer <i>BB</i>				

<b>SUMMARY INFORMATION</b>	
Vendor Name  Hellman Electric Corp.	Contract Number  BW-39/RK-60
Description: Design-Build Services for the Installation of Facility Wide Monitoring and Detection Systems at the Bronx-Whitestone Bridge and Robert F. Kennedy Bridge Facilities	
Total Amount Hellman Award - \$71,797,700.00 Stipends - \$480,000	
Contract Term (including Options, if any) 36 Months	
Option(s) included in Total Amount? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Renewal? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Procurement Type <input checked="" type="checkbox"/> Competitive <input type="checkbox"/> Non-competitive	
Solicitation Type <input checked="" type="checkbox"/> RFP <input type="checkbox"/> Bid <input type="checkbox"/> Other:	
Funding Source <input type="checkbox"/> Operating <input checked="" type="checkbox"/> Capital <input type="checkbox"/> Federal <input type="checkbox"/> Other:	

## Narrative

### I. PURPOSE/RECOMMENDATION

B&T is seeking Board approval under the All Agency General Contract Procurement Guidelines to award a competitively solicited public work contract for Design-Build Services for the Installation of Facility Wide Monitoring and Detection Systems at the Bronx-Whitestone Bridge and Robert F. Kennedy Bridge facilities for a period of 36 Months at a cost of \$71,797,700. In accordance with the MTA Design-Build Best Practice Guidance, and in order to enhance competition and defray proposal costs, this solicitation included stipends to be paid to each unsuccessful proposer in the amount of \$160,000 whose proposal met a defined standard. Accordingly, approval is also requested to pay stipends totaling \$480,000.

### II. DISCUSSION

In July 2016, the Board authorized B&T to enter into a competitive Request for Proposal (RFP) process for design-build services for the installation of facility wide monitoring and detection systems at the Bronx-Whitestone Bridge and Robert F. Kennedy Bridge facilities. The work requires the design, construction and construction quality control services to install security equipment, fire/smoke detection and alarm systems at anchorages, towers, perimeter doors/hatches, undersides, fenders, tower pedestals and electrical substations along with other critical infrastructure locations at the Bronx-Whitestone Bridge and Robert F. Kennedy Bridge facilities.

(rev. 4/07/10)

## Staff Summary

The service requirements were publicly advertised; seven firms submitted qualification information and based on a review of their qualifications, four firms were deemed qualified to receive the RFP. All four firms submitted proposals: Hellman Electric Corp. (Hellman) [\$73,795,200], Mass Electric Construction Company (Mass Electric) [\$65,198,000], E-J Electric Installation Co. (E-J Electric) [\$76,805,700] and Parsons Transportation Group of New York, Inc. (Parsons) [\$79,663,021.36].

The proposals were evaluated against established criteria set forth in the RFP, including design-build technical approach, key personnel and management approach, oral presentations and proposed price. The Selection Committee unanimously recommended Hellman, the highest rated firm based on several factors. Hellman's technical proposal was considered the most thorough in determining the methodologies and choices for the digital video management system (DVMS), intelligent video analytics system (IVAS), and network systems. Hellman demonstrated the best understanding of B&T's security concepts and incorporated a lessons learned component into their approach from a recently completed similar project for B&T. Also, they presented a thorough and innovative approach, demonstrated a strong understanding of the specification requirements and proposed a realistic schedule to work concurrently at both bridges to complete the Project on time. Hellman proposed a highly qualified team with extensive experience working together on similar work.

Hellman's price proposal was the second lowest. They demonstrated prior experience and a sound understanding for the anticipated successful completion of the Project as compared to the other competing firms. Mass Electric's technical proposal did not include sufficient details for critical project components and their proposed team did not demonstrate the same level of experience as compared to Hellman. The Parsons and E-J Electric technical proposals did not exhibit the same level of technical detail and submitted higher priced proposals as compared to Hellman. Accordingly, Hellman's proposal is the best overall value and is deemed most advantageous to B&T as compared to the other proposers.

Hellman submitted a proposal of \$73,795,200. Negotiations were conducted and the parties agreed to \$71,797,700 which is 3% above the Engineer's estimate of \$69,701,796 and is considered fair and reasonable. Hellman has been determined to be a responsible design-build contractor.

### **III. D/M/WBE INFORMATION**

MTA Department of Diversity and Civil Rights have assigned goals of 15% MBE and 15% WBE to this contract. Award will not be made until the Department of Diversity and Civil Rights' approval is obtained. Hellman has achieved its previous MWDBE goals on previous MTA contracts.

### **IV. IMPACT ON FUNDING**

Funding is available in the 2015–2019 Capital Program under Projects BW-39/D03566 (\$28,481,500) and RK-60/D03650 (\$43,316,200). Funding for stipends available under D706AW22.

### **V. ALTERNATIVES**

There are no recommended alternatives. The Authority does not possess the resources required to perform these services.



## Staff Summary

Page 1 of 2

Item Number 2 (Final)					
Dept & Dept Head Name: Aris Stathopoulos, P.E. <i>Aris Stathopoulos</i>					
Division & Division Head Name: Joe Keane, P.E., V.P. <i>Joe Keane</i>					
Board Reviews					
Order	To	Date	Approval	Info	Other
1	President	11/27/17			
2	MTA B&T Committee	12/11/17			
3	MTA Board	12/13/17			
Internal Approvals					
Order	Approval	Order	Approval		
1	Chief Financial Officer <i>AP</i>	4	Executive Vice President <i>AP</i>		
2	General Counsel <i>MMT</i>	5	President <i>JK</i>		
3	Chief Procurement Officer <i>Joe Keane</i>				

<b>SUMMARY INFORMATION</b>	
Vendor Name American Bridge Company	Contract Number VN-34
Description Design-Build Services for Main Cable and Suspender Rope Inspection & Testing at the Verrazano-Narrows Bridge	
Total Amount \$17,250,000	
Contract Term (including Options, if any) Twenty-four (24) Months	
Option(s) included in Total Amount? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Renewal? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Procurement Type <input checked="" type="checkbox"/> Competitive <input type="checkbox"/> Non-competitive	
Solicitation Type <input checked="" type="checkbox"/> RFP <input type="checkbox"/> Bid <input type="checkbox"/> Other:	
Funding Source <input type="checkbox"/> Operating <input checked="" type="checkbox"/> Capital <input type="checkbox"/> Federal <input type="checkbox"/> Other:	

### Narrative

#### I. PURPOSE/RECOMMENDATION

B&T is seeking Board approval under the All-Agency General Contract Procurement Guidelines to award a competitively solicited public work contract for Design-Build Services for Main Cable and Suspender Rope Inspection & Testing at the Verrazano-Narrows Bridge to American Bridge Company (ABC) for a period of twenty-four (24) months at a price of \$17,250,000.

#### II. DISCUSSION

In July 2016, the Board authorized B&T to enter into a competitive Request for Proposal (RFP) process for design-build services for Main Cable and Suspender Rope Inspection & Testing at the Verrazano-Narrows Bridge (VNB). The Work requires design, construction, construction inspection, non-destructive testing (NDT), and materials testing of the main cables and suspender ropes at the VNB to determine main cable and suspender rope factors of safety and rate of deterioration. Also, provide long term recommendations for future maintenance and monitoring of the main cables and suspender ropes.

The service requirements were publicly advertised, four firms submitted qualification information and based on a review of their qualifications, all four firms were deemed qualified to receive the RFP. All four firms submitted proposals. The design-build proposers are: ABC; Halmar International, LLC; Kiewit Infrastructure Co.; and Tutor Perini Corporation / IHI Inc., a Joint Venture. The proposals were evaluated against established criteria set forth in the RFP, including proposed

## Staff Summary

price, schedule, design-build technical approach, management approach and organizational structure. Evaluations were based on the selection criteria and oral presentations. The committee recommended ABC as the highest rated firm. The committee's basis for the selection included: (i) proposed technical design for retrofitting suspender rope socket bearing areas, which will benefit the Authority with a better and more structurally sound design, thereby mitigating future maintenance cleaning and costs; (ii) ABC's designer, Thornton Tomasetti has extensive experience in similar cable inspection and suspender ropes removal projects; (iii) ABC offered the most aggressive schedule, committing to achieve substantial completion within the first year; and (iv) the Committee's consensus is that ABC's proposal is the best overall value and is deemed most advantageous to B&T as compared to the other proposers.

ABC submitted the lowest proposal in the amount of \$17,250,000. The Engineer's estimate is \$18,346,797. The other proposed prices are as follows: Kiewit Infrastructure Co. (\$28,929,000); Tutor Perini Corporation / IHI Inc., a Joint Venture (\$29,200,000); and Halmar International LLC (\$43,550,000). During negotiations, B&T and ABC reviewed the proposal and clarified the scope. These discussions resulted in B&T accepting ABC's proposal in the amount totaling \$17,250,000, which is approximately 6% lower than the estimate and is considered fair and reasonable.

### **III. D/M/WBE INFORMATION**

The MTA DDCR has established goals of 0% MBE and 0% WBE for the Contract.

### **IV. IMPACT ON FUNDING**

Funding is available in the 2015-2019 Capital Program under Project D701/VN34, Task D03759.

### **V. ALTERNATIVES**

There are no recommended alternatives. B&T does not possess the resources required to perform these services.

**MTA CONSOLIDATED**  
**EXPLANATION OF MAJOR VARIANCES BETWEEN NOVEMBER FORECAST AND ACTUAL**  
**OCTOBER 2017 YEAR-TO-DATE**  
**(\$ in millions)**

	<b>Favorable (Unfavorable)</b>		<b>Reason for Variance</b>
	<u>Variance</u>	<u>Percent</u>	
Total Revenue	\$7.2	0.1%	<p><u>B&amp;T</u> - \$4.9M favorable primarily due to higher traffic.</p> <p><u>FMTAC</u> - \$3.1M favorable due to a lower-than-forecasted loss to the market value of the invested asset portfolio.</p> <p><u>MTAHQ</u> - \$2.1M favorable mainly due to higher rental income and Transit Museum revenue.</p> <p><u>MTA Bus</u> - \$0.6M favorable primarily due to higher ridership.</p> <p><u>LIRR</u> - (\$1.4M) unfavorable, reflecting the impact of lower commutation ridership, special services and the timing of advertising revenue, partially offset by higher non-commutation revenue, rentals, freight and miscellaneous revenue.</p> <p><u>NYCT</u> - (\$1.2M) unfavorable mainly due to lower other operating revenue, partially offset by higher farebox revenue.</p> <p><u>MNR</u> - (\$0.7M) unfavorable, reflecting lower other operating revenue due to timing.</p>
Total Expenses	\$149.0	1.1%	<p><u>MTA Bus</u> - \$115.8M favorable mainly due to the timing of GASB 68 expense adjustments (\$95.5M), fleet and facility maintenance, SBS rollouts and interagency billings, partially offset by higher overtime and claims expenses.</p> <p><u>MNR</u> - \$20.1M favorable due to timing of maintenance and professional services contracts, as well as lower energy rates and health and welfare costs.</p> <p><u>LIRR</u> - \$16.7M favorable mainly due to lower chargeouts of material, delayed reliability centered maintenance of 12-year diesel propulsion work and non-recurring engineering costs, the timing of Enterprise Asset Management, Penn Station Emergency Mitigation payments, MTA chargebacks, and medical and drug testing. Additionally, favorable labor expenses are due to vacant positions, lower pay rates and associated fringe costs, and lower security services. These favorable results were partially offset by higher public liability expenses, bad debt reserves, higher reserves for FELA Indemnity payments, equipment vehicle payments, overtime expenses, higher charge-outs for materials in Engineering, and the timing of payments for joint facilities and the Wheel Impact Load Detector.</p>

**MTA CONSOLIDATED**  
**EXPLANATION OF MAJOR VARIANCES BETWEEN NOVEMBER FORECAST AND ACTUAL**  
**OCTOBER 2017 YEAR-TO-DATE**  
**(\$ in millions)**

	<b>Favorable (Unfavorable)</b>		<b>Reason for Variance</b>
	<u>Variance</u>	<u>Percent</u>	
			<p><u>HQ</u> - \$16.7M favorable primarily due to lower expenses for depreciation, the timing of expenses related to the Truck Toll Reduction Program which was administered during Penn Station Emergency Mitigation work, professional services, and electric power and maintenance. These favorable results were partially offset by higher labor expenses.</p> <p><u>B&amp;T</u> - \$12.8M favorable mostly due to lower labor costs driven by vacancies, and the timing of major maintenance projects, security equipment purchases, advertising/marketing expenses and general engineering consulting services.</p> <p><u>NYCT</u> - \$1.2M favorable primarily due to lower depreciation expenses, partially offset by higher overtime for Car Equipment requirements.</p> <p><u>SIR</u> - \$0.6M favorable mostly due to the timing of maintenance contract expenses, partially offset by higher depreciation expenses.</p> <p><u>FMTAC</u> - (\$32.9M) unfavorable primarily due to unreimbursed Superstorm Sandy losses, an excess loss claim, and higher-than-forecasted operating expenses.</p> <p><u>Other Expense Adjustments</u> - (\$2.2M) unfavorable mainly due to timing differences in project completions.</p>
Subsidies	(7.1)	-0.1%	The unfavorable variance was mainly attributable to accrual timing delays for PMT and MTA Aid, offset by slightly favorable PBT transactions.
Debt Service	(50.4)	-2.4%	Unfavorable variance of \$50.4 million primarily due to the timing of debt service deposits, as the debt service for Transportation Revenue Bonds are pre-funded through November 15. This variance will be reversed in November 2017.

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**MID-YEAR AND NOVEMBER FORECASTS vs. ACTUAL RESULTS (NON-REIMBURSABLE)**  
**OCTOBER 2017 YEAR-TO-DATE**  
**(\$ in millions)**

	<b>October Year-to-Date</b>			<b>Favorable(Unfavorable) Variance</b>			
	<u>Mid-Year Forecast</u>	<u>November Forecast</u>	<u>Actual</u>	<u>Mid-Year Forecast</u>	<u>November Forecast</u>	<u>Mid-Year Forecast</u>	<u>November Forecast</u>
				<u>%</u>	<u>%</u>		
<b>Total Revenue</b>	<b>\$7,319.4</b>	<b>\$7,273.6</b>	<b>\$7,280.6</b>	<b>(\$38.8)</b>	<b>(0.5)</b>	<b>\$7.1</b>	<b>0.1</b>
Total Expenses before Non-Cash Liability Adjs	10,700.9	10,565.6	10,542.4	158.6	1.5	23.2	0.2
Depreciation	2,156.3	2,079.6	2,065.5	90.8	4.2	14.1	0.7
OPEB Obligation	1,292.0	1,236.3	1,228.9	63.0	4.9	7.4	0.6
GASB 68 Pension Expenses	25.4	104.8	4.3	21.0	82.5	100.5	95.9
Environmental Remediation	4.8	2.1	1.8	3.0	62.8	0.3	12.4
<b>Total Expenses</b>	<b>\$14,179.5</b>	<b>\$13,988.4</b>	<b>\$13,842.8</b>	<b>\$336.6</b>	<b>2.4</b>	<b>\$145.6</b>	<b>1.0</b>
Less: B&T Depreciation & GASB Adjustments	<b>\$171.2</b>	<b>\$188.8</b>	<b>\$192.3</b>	<b>(\$21.0)</b>	<b>(12.2)</b>	<b>(\$3.5)</b>	<b>(1.8)</b>
<b>Adjusted Total Expenses</b>	<b>\$14,008.3</b>	<b>\$13,799.6</b>	<b>\$13,650.7</b>	<b>\$357.6</b>	<b>2.6</b>	<b>\$148.9</b>	<b>1.1</b>
<b>Net Surplus/(Deficit)</b>	<b>(\$6,688.9)</b>	<b>(\$6,526.0)</b>	<b>(\$6,370.0)</b>	<b>\$318.8</b>	<b>4.8</b>	<b>\$156.0</b>	<b>2.4</b>
<b>Subsidies</b>	<b>\$5,623.2</b>	<b>\$5,583.4</b>	<b>\$5,576.3</b>	<b>(\$46.9)</b>	<b>(0.8)</b>	<b>(\$7.1)</b>	<b>(0.1)</b>
<b>Debt Service</b>	<b>\$2,150.0</b>	<b>\$2,123.9</b>	<b>\$2,174.3</b>	<b>(\$24.3)</b>	<b>(1.1)</b>	<b>(\$50.4)</b>	<b>(2.4)</b>

**NOTE:**

- Results are preliminary and subject to audit review
- Totals may not add due to rounding
- \* Variance exceeds 100%



**METROPOLITAN TRANSPORTATION AUTHORITY**  
**July Financial Plan - 2017 Mid-Year Forecast**  
**Accrual Statement of Operations by Category**  
**October 2017 Monthly**  
(\$ in millions)

	Non-Reimbursable				Reimbursable				Total			
	Mid-Year Forecast	Actual	-Variance: Fav/(Unfav)- Dollars	Percent	Mid-Year Forecast	Actual	-Variance: Fav/(Unfav)- Dollars	Percent	Mid-Year Forecast	Actual	-Variance: Fav/(Unfav)- Dollars	Percent
<b>Revenue</b>												
Farebox Revenue	\$547.3	\$541.4	(\$5.9)	(1.1)	\$0.0	\$0.0	\$0.0	N/A	\$547.3	\$541.4	(\$5.9)	(1.1)
Toll Revenue	165.7	168.7	3.0	1.8	0.0	0.0	0.0	N/A	165.7	168.7	3.0	1.8
Other Revenue	58.0	56.4	(1.6)	(2.7)	0.0	0.0	0.0	N/A	58.0	56.4	(1.6)	(2.7)
Capital and Other Reimbursements	0.0	0.0	0.0	N/A	181.2	204.3	23.1	12.7	181.2	204.3	23.1	12.7
<b>Total Revenues</b>	<b>\$771.0</b>	<b>\$766.5</b>	<b>(\$4.5)</b>	<b>(0.6)</b>	<b>\$181.2</b>	<b>\$204.3</b>	<b>\$23.1</b>	<b>12.7</b>	<b>\$952.2</b>	<b>\$970.8</b>	<b>\$18.6</b>	<b>2.0</b>
<b>Expenses</b>												
<b>Labor:</b>												
Payroll	\$411.2	\$416.0	(\$4.8)	(1.2)	\$66.4	\$60.2	\$6.2	9.3	\$477.6	\$476.2	\$1.4	0.3
Overtime	66.2	90.4	(24.2)	(36.5)	12.7	25.7	(13.0)	<(100.0)	78.9	116.1	(37.1)	(47.1)
Health and Welfare	104.6	107.6	(3.0)	(2.8)	6.9	7.4	(0.5)	(7.5)	111.6	115.1	(3.5)	(3.1)
OPEB Current Payments	50.0	40.5	9.4	18.9	0.8	0.7	0.1	7.9	50.7	41.2	9.5	18.7
Pension	109.5	106.3	3.1	2.9	9.3	9.7	(0.3)	(3.3)	118.8	116.0	2.8	2.4
Other Fringe Benefits	69.4	71.6	(2.2)	(3.2)	21.9	22.1	(0.2)	(1.1)	91.3	93.7	(2.4)	(2.7)
Reimbursable Overhead	(32.7)	(40.9)	8.2	25.2	32.4	40.9	(8.5)	(26.4)	(0.3)	0.0	(0.3)	<(100.0)
<b>Total Labor Expenses</b>	<b>\$778.3</b>	<b>\$791.6</b>	<b>(\$13.3)</b>	<b>(1.7)</b>	<b>\$150.4</b>	<b>\$166.8</b>	<b>(\$16.4)</b>	<b>(10.9)</b>	<b>\$928.6</b>	<b>\$958.4</b>	<b>(\$29.7)</b>	<b>(3.2)</b>
<b>Non-Labor:</b>												
Electric Power	\$36.3	\$35.0	\$1.3	3.6	\$0.0	\$0.7	(\$0.7)	<(100.0)	\$36.3	\$35.7	\$0.6	1.8
Fuel	11.9	13.5	(1.6)	(13.9)	0.0	0.0	0.0	86.1	11.9	13.5	(1.6)	(13.8)
Insurance	3.2	(0.8)	4.1	> 100.0	1.4	1.5	(0.1)	(8.5)	4.6	0.7	3.9	85.4
Claims	23.4	29.4	(6.0)	(25.6)	0.0	0.0	0.0	N/A	23.4	29.4	(6.0)	(25.6)
Paratransit Service Contracts	35.3	34.6	0.7	2.0	0.0	0.0	0.0	N/A	35.3	34.6	0.7	2.0
Maintenance and Other Operating Contracts	66.2	62.3	3.9	5.9	6.3	6.8	(0.5)	(7.3)	72.6	69.1	3.5	4.8
Professional Services Contracts	53.1	68.3	(15.2)	(28.6)	9.3	6.3	3.0	32.7	62.4	74.6	(12.1)	(19.4)
Materials and Supplies	56.9	56.2	0.7	1.2	13.5	19.9	(6.5)	(47.9)	70.4	76.2	(5.8)	(8.2)
Other Business Expenses	16.7	13.1	3.6	21.4	0.3	0.8	(0.6)	<(100.0)	17.0	14.0	3.0	17.7
<b>Total Non-Labor Expenses</b>	<b>\$303.2</b>	<b>\$311.8</b>	<b>(\$8.6)</b>	<b>(2.8)</b>	<b>\$30.8</b>	<b>\$36.0</b>	<b>(\$5.2)</b>	<b>(16.9)</b>	<b>\$334.0</b>	<b>\$347.8</b>	<b>(\$13.8)</b>	<b>(4.1)</b>
<b>Other Expense Adjustments</b>												
Other	\$4.4	\$2.9	\$1.5	33.6	\$0.0	\$0.0	\$0.0	N/A	\$4.4	\$2.9	\$1.5	33.6
General Reserve	0.0	0.0	0.0	N/A	0.0	0.0	0.0	N/A	0.0	0.0	0.0	N/A
<b>Total Other Expense Adjustments</b>	<b>\$4.4</b>	<b>\$2.9</b>	<b>\$1.5</b>	<b>33.6</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>N/A</b>	<b>\$4.4</b>	<b>\$2.9</b>	<b>\$1.5</b>	<b>33.6</b>
<b>Total Expenses Before Non-Cash Liability Adjs.</b>	<b>\$1,085.8</b>	<b>\$1,106.3</b>	<b>(\$20.5)</b>	<b>(1.9)</b>	<b>\$181.2</b>	<b>\$202.8</b>	<b>(\$21.6)</b>	<b>(11.9)</b>	<b>\$1,267.0</b>	<b>\$1,309.0</b>	<b>(\$42.0)</b>	<b>(3.3)</b>
Depreciation	\$224.3	\$213.9	\$10.4	4.6	\$0.0	\$0.0	\$0.0	N/A	\$224.3	\$213.9	\$10.4	4.6
OPEB Liability Adjustment	36.3	33.9	2.4	6.7	0.0	0.0	0.0	N/A	36.3	33.9	2.4	6.7
GASB 68 Pension Expense Adjustment	5.7	0.0	5.7	100.0	0.0	0.0	0.0	N/A	5.7	0.0	5.7	100.0
Environmental Remediation	0.2	0.2	0.0	(7.2)	0.0	0.0	0.0	N/A	0.2	0.2	0.0	(7.2)
<b>Total Expenses After Non-Cash Liability Adjs.</b>	<b>\$1,352.3</b>	<b>\$1,354.2</b>	<b>(\$1.9)</b>	<b>(0.1)</b>	<b>\$181.2</b>	<b>\$202.8</b>	<b>(\$21.6)</b>	<b>(11.9)</b>	<b>\$1,533.5</b>	<b>\$1,557.0</b>	<b>(\$23.5)</b>	<b>(1.5)</b>
Less: B&T Depreciation & GASB Adjustments	\$14.2	\$19.9	(\$5.6)	(39.6)	\$0.0	\$0.0	\$0.0	0.0	\$14.2	\$19.9	(\$5.6)	(39.6)
<b>Adjusted Total Expenses</b>	<b>\$1,338.1</b>	<b>\$1,334.3</b>	<b>\$3.8</b>	<b>0.3</b>	<b>\$181.2</b>	<b>\$202.8</b>	<b>(\$21.6)</b>	<b>(11.9)</b>	<b>\$1,519.3</b>	<b>\$1,537.1</b>	<b>(\$17.8)</b>	<b>(1.2)</b>
<b>Net Surplus/(Deficit) excl. Subsidies and Debt Service</b>	<b>(\$567.1)</b>	<b>(\$567.8)</b>	<b>(\$0.7)</b>	<b>(0.1)</b>	<b>\$0.0</b>	<b>\$1.5</b>	<b>\$1.5</b>	<b>N/A</b>	<b>(\$567.1)</b>	<b>(\$566.3)</b>	<b>\$0.8</b>	<b>0.1</b>
<b>Subsidies</b>	<b>\$255.0</b>	<b>\$253.4</b>	<b>(\$1.6)</b>	<b>(0.6)</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>N/A</b>	<b>\$255.0</b>	<b>\$253.4</b>	<b>(\$1.6)</b>	<b>(0.6)</b>
<b>Debt Service</b>	<b>207.8</b>	<b>256.8</b>	<b>(49.0)</b>	<b>(23.6)</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>N/A</b>	<b>207.8</b>	<b>256.8</b>	<b>(49.0)</b>	<b>(23.6)</b>

Notes: Totals may not add due to rounding

Results are based on the preliminary close of the general ledger and are subject to review and adjustment. Please note that the current months' actuals do not include post-close adjustments, which will be captured in the subsequent month's YTD results.

The impacts of the Amtrak Emergency Repair Work at Penn Station, which were captured as below-the-line adjustments in the 2017 July Financial Plan, have been allocated to specific Agencies and captured within their baseline Mid-Year Forecast.

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**July Financial Plan - 2017 Mid-Year Forecast**  
**Accrual Statement of Operations by Category**  
**October 2017 Year-to-Date**  
(\$ in millions)

	Non-Reimbursable				Reimbursable				Total			
	Mid-Year Forecast	Actual	-Variance: Fav/(Unfav)- Dollars	Percent	Mid-Year Forecast	Actual	-Variance: Fav/(Unfav)- Dollars	Percent	Mid-Year Forecast	Actual	-Variance: Fav/(Unfav)- Dollars	Percent
<b>Revenue</b>												
Farebox Revenue	\$5,154.6	\$5,131.1	(\$23.5)	(0.5)	\$0.0	\$0.0	\$0.0	N/A	\$5,154.6	\$5,131.1	(\$23.5)	(0.5)
Toll Revenue	1,597.2	1,596.9	(0.3)	(0.0)	0.0	0.0	0.0	N/A	1,597.2	1,596.9	(0.3)	(0.0)
Other Revenue	567.5	552.6	(15.0)	(2.6)	0.0	0.0	0.0	N/A	567.5	552.6	(15.0)	(2.6)
Capital and Other Reimbursements	0.0	0.0	0.0	N/A	1,794.1	1,783.1	(11.0)	(0.6)	1,794.1	1,783.1	(11.0)	(0.6)
<b>Total Revenues</b>	<b>\$7,319.4</b>	<b>\$7,280.6</b>	<b>(\$38.8)</b>	<b>(0.5)</b>	<b>\$1,794.1</b>	<b>\$1,783.1</b>	<b>(\$11.0)</b>	<b>(0.6)</b>	<b>\$9,113.5</b>	<b>\$9,063.7</b>	<b>(\$49.8)</b>	<b>(0.5)</b>
<b>Expenses</b>												
<b>Labor:</b>												
Payroll	\$4,146.7	\$4,129.8	\$16.9	0.4	\$594.8	\$562.7	\$32.0	5.4	\$4,741.4	\$4,692.5	\$48.9	1.0
Overtime	674.7	753.7	(79.0)	(11.7)	179.2	223.7	(44.5)	(24.8)	853.9	977.4	(123.5)	(14.5)
Health and Welfare	1,014.0	988.0	26.0	2.6	61.5	62.3	(0.7)	(1.2)	1,075.5	1,050.2	25.3	2.4
OPEB Current Payments	487.9	467.4	20.5	4.2	7.6	8.3	(0.7)	(9.0)	495.5	475.7	19.8	4.0
Pension	1,112.4	1,105.3	7.1	0.6	82.9	80.5	2.4	2.9	1,195.3	1,185.8	9.5	0.8
Other Fringe Benefits	736.4	738.2	(1.8)	(0.2)	210.8	210.3	0.4	0.2	947.1	948.5	(1.4)	(0.1)
Reimbursable Overhead	(385.3)	(394.0)	8.7	2.2	383.0	391.5	(8.5)	(2.2)	(2.3)	(2.5)	0.1	6.0
<b>Total Labor Expenses</b>	<b>\$7,786.7</b>	<b>\$7,788.3</b>	<b>(\$1.6)</b>	<b>(0.0)</b>	<b>\$1,519.8</b>	<b>\$1,539.3</b>	<b>(\$19.6)</b>	<b>(1.3)</b>	<b>\$9,306.4</b>	<b>\$9,327.6</b>	<b>(\$21.2)</b>	<b>(0.2)</b>
<b>Non-Labor:</b>												
Electric Power	\$376.5	\$363.5	\$13.0	3.4	\$0.7	\$1.5	(\$0.8)	<(100.0)	\$377.2	\$365.0	\$12.2	3.2
Fuel	120.4	122.6	(2.2)	(1.8)	0.1	0.1	0.0	39.2	120.5	122.6	(2.1)	(1.8)
Insurance	23.9	1.6	22.3	93.2	11.1	10.7	0.3	3.0	35.0	12.3	22.7	64.7
Claims	265.5	326.5	(61.0)	(23.0)	0.0	0.0	0.0	N/A	265.5	326.5	(61.0)	(23.0)
Paratransit Service Contracts	329.7	326.9	2.7	0.8	0.0	0.0	0.0	N/A	329.7	326.9	2.7	0.8
Maintenance and Other Operating Contracts	609.2	540.6	68.6	11.3	54.0	57.4	(3.4)	(6.2)	663.2	598.0	65.2	9.8
Professional Services Contracts	439.6	374.4	65.2	14.8	65.5	45.7	19.8	30.3	505.1	420.1	85.0	16.8
Materials and Supplies	530.3	491.0	39.3	7.4	142.3	126.2	16.2	11.4	672.6	617.2	55.4	8.2
Other Business Expenses	179.9	167.1	12.8	7.1	0.7	2.4	(1.7)	<(100.0)	180.6	169.5	11.1	6.2
<b>Total Non-Labor Expenses</b>	<b>\$2,875.0</b>	<b>\$2,714.3</b>	<b>\$160.8</b>	<b>5.6</b>	<b>\$274.4</b>	<b>\$243.8</b>	<b>\$30.5</b>	<b>11.1</b>	<b>\$3,149.4</b>	<b>\$2,958.1</b>	<b>\$191.3</b>	<b>6.1</b>
<b>Other Expense Adjustments</b>												
Other	\$39.2	\$39.8	(\$0.6)	(1.5)	\$0.0	\$0.0	\$0.0	N/A	\$39.2	\$39.8	(\$0.6)	(1.5)
General Reserve	0.0	0.0	0.0	N/A	0.0	0.0	0.0	N/A	0.0	0.0	0.0	N/A
<b>Total Other Expense Adjustments</b>	<b>\$39.2</b>	<b>\$39.8</b>	<b>(\$0.6)</b>	<b>(1.5)</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>N/A</b>	<b>\$39.2</b>	<b>\$39.8</b>	<b>(\$0.6)</b>	<b>(1.5)</b>
<b>Total Expenses Before Non-Cash Liability Adjs.</b>	<b>\$10,700.9</b>	<b>\$10,542.4</b>	<b>\$158.6</b>	<b>1.5</b>	<b>\$1,794.1</b>	<b>\$1,783.1</b>	<b>\$11.0</b>	<b>0.6</b>	<b>\$12,495.0</b>	<b>\$12,325.5</b>	<b>\$169.5</b>	<b>1.4</b>
Depreciation	\$2,156.3	\$2,065.5	\$90.8	4.2	\$0.0	\$0.0	\$0.0	N/A	\$2,156.3	\$2,065.5	\$90.8	4.2
OPEB Liability Adjustment	1,292.0	1,228.9	63.1	4.9	0.0	0.0	0.0	N/A	1,292.0	1,228.9	63.1	4.9
GASB 68 Pension Expense Adjustment	25.5	4.3	21.2	83.1	0.0	0.0	0.0	N/A	25.5	4.3	21.2	83.1
Environmental Remediation	4.8	1.8	3.0	62.2	0.0	0.0	0.0	N/A	4.8	1.8	3.0	62.2
<b>Total Expenses After Non-Cash Liability Adjs.</b>	<b>\$14,179.5</b>	<b>\$13,842.8</b>	<b>\$336.6</b>	<b>2.4</b>	<b>\$1,794.1</b>	<b>\$1,783.1</b>	<b>\$11.0</b>	<b>0.6</b>	<b>\$15,973.6</b>	<b>\$15,626.0</b>	<b>\$347.6</b>	<b>2.2</b>
Less: B&T Depreciation & GASB Adjustments	\$171.2	\$192.2	(\$21.0)	(12.2)	\$0.0	\$0.0	\$0.0	0.0	\$171.2	\$192.2	(\$21.0)	(12.2)
<b>Adjusted Total Expenses</b>	<b>\$14,008.3</b>	<b>\$13,650.7</b>	<b>\$357.6</b>	<b>2.6</b>	<b>\$1,794.1</b>	<b>\$1,783.1</b>	<b>\$11.0</b>	<b>0.6</b>	<b>\$15,802.4</b>	<b>\$15,433.8</b>	<b>\$368.6</b>	<b>2.3</b>
<b>Net Surplus/(Deficit) excl. Subsidies and Debt Service</b>	<b>(\$6,688.9)</b>	<b>(\$6,370.0)</b>	<b>\$318.8</b>	<b>4.8</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>N/A</b>	<b>(\$6,688.9)</b>	<b>(\$6,370.0)</b>	<b>\$318.8</b>	<b>4.8</b>
<b>Subsidies</b>	<b>\$5,623.2</b>	<b>\$5,576.3</b>	<b>(\$46.9)</b>	<b>(0.8)</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>N/A</b>	<b>\$5,623.2</b>	<b>\$5,576.3</b>	<b>(\$46.9)</b>	<b>(0.8)</b>
<b>Debt Service</b>	<b>2,150.0</b>	<b>2,174.3</b>	<b>(24.3)</b>	<b>(1.1)</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>N/A</b>	<b>2,150.0</b>	<b>2,174.3</b>	<b>(24.3)</b>	<b>(1.1)</b>

Notes: Totals may not add due to rounding

Results are based on the preliminary close of the general ledger and are subject to review and adjustment. Please note that the current months' actuals do not include post-close adjustments, which will be captured in the subsequent month's YTD results.

The impacts of the Amtrak Emergency Repair Work at Penn Station, which were captured as below-the-line adjustments in the 2017 July Financial Plan, have been allocated to specific Agencies and captured within their baseline Mid-Year Forecast.

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**JULY FINANCIAL PLAN - 2017 MID-YEAR FORECAST**  
**EXPLANATION OF VARIANCES BETWEEN MID-YEAR FORECAST AND ACTUAL ACCRUAL BASIS**  
**OCTOBER 2017**  
(\$ in millions)

Generic Revenue or Expense Category	Nonreimb or Reimb	OCTOBER		Reason for Variance	YEAR-TO-DATE		Reason for Variance
		Favorable (Unfavorable)			Favorable (Unfavorable)		
		\$	%		\$	%	
Farebox Revenue	NR	(5.9)	(1.1)	NYCT was unfavorable by (\$6.5M) due mainly to lower ridership. Other agency variances were minor.	(23.5)	(0.5)	As with recent results, the shortfall in farebox revenue reflects a mix of lower ridership and yields, particularly at NYCT (\$25.3M) and MNR (\$1.1M), partially offset by favorable variances of \$2.4M at MTA Bus and \$0.5M at the LIRR due to higher ridership.
Vehicle Toll Revenue	NR	3.0	1.8	Toll revenue was favorable primarily due to higher traffic.	(0.3)	(0.0)	Lower toll revenue mainly reflects lower average YTD toll.
Other Operating Revenue	NR	(1.6)	(2.7)	The shortfall was primarily the result of suspending commissary services and the timing of GCT retail revenue at MNR (\$2.2M); and the timing of station privileges and miscellaneous revenue, and lower special services revenue at the LIRR (\$0.6M). These results were partially offset by the timing of reimbursements at NYCT \$0.7M and a positive shift in the invested asset portfolio at FMTAC \$0.6M.	(15.0)	(2.6)	Majority of the variance (\$10.5M) is attributable to NYCT and consists of unfavorable timing impacts for fare reimbursement, paratransit urban tax and advertising revenue. Other contributing factors continue as reported for the month at MNR (\$6.1M) and at the LIRR (\$1.1M) and also includes delayed reimbursement of a grant for the Commuter Railroad Grade Crossing project at MTAHQ (\$3.8M). Partially offsetting these results were favorable variances of \$5.8M at FMTAC due to a positive shift in the invested asset portfolio, and \$0.9M at B&T, reflecting the receipt of FEMA reimbursements for Sandy-restoration work.
Payroll	NR	(4.8)	(1.2)	Overages were: (\$4.2M) at MTAHQ due to an incorrect accounting adjustment which will be corrected in the subsequent period; (\$4.0M) at NYCT due to the timing of reimbursable work requirements and higher Workers' Compensation differential costs; and (\$1.6M) at MNR mainly due to increased Yankee Stadium service, and a reallocation of forces to operations coverage caused by the rescheduling of capital projects. Partially offsetting those results were favorable variances of \$2.8M at the LIRR and \$1.7M at B&T, due to higher vacancies.	16.9	0.4	Vacancies and timing were mainly responsible for favorable variances of \$11.3M at B&T, \$8.2M the LIRR, \$2.9M at MTAHQ, and \$1.0M at SIR. These results were partially offset by unfavorable variances of (\$3.9M) at MNR and (\$2.2M) at NYCT, reflecting a continuation of the causes noted for the month.
Overtime	NR	(24.2)	(36.5)	Track, signal, infrastructure and station conditions, which caused subway service delays and station overcrowding, required a greater level of programmatic/routine maintenance as well as support for initiatives comprising the Subway Action Plan. Combined, they were the primary cause for the (\$20.4M) overage at NYCT. Other contributors of the overage was the LIRR (\$1.3M) due to higher maintenance, vacancy/absentee coverage and scheduled services; MTA Bus (\$1.0M) due to increased running-time/traffic conditions, shuttle support service, and lower availability; and MNR (\$0.9M) caused by higher scheduled service and programmatic/routine maintenance. Other Agency variances were minor. (See Overtime Decomposition Report for more details).	(79.0)	(11.7)	Conditions and corrective actions noted for the month and over recent months continue to force the heavy usage of overtime at NYCT, the financial impact of which constitutes the lion's share of the YTD overage. By Agency, the variances are (\$69.4M) at NYCT, (\$4.6M) at MTA Bus, (\$1.9M) at the LIRR, (\$1.2M) at MTAHQ, (\$0.9M) at MNR, and (\$0.7M) at B&T. (See Overtime Decomposition Report for more details)
Health and Welfare	NR	(3.0)	(2.8)	Timing was responsible for an unfavorable variance of (\$5.3M) at NYCT. This result was partially offset by favorable variances of \$1.0M at the LIRR and \$0.6M at MTAHQ due to higher vacancies, and \$0.7M at MNR due to lower enrollments and dental costs.	26.0	2.6	Ongoing factors noted for the month continue, producing favorable variances of \$10.0M at NYCT, \$9.3M at MNR, \$4.2M at the LIRR, \$4.1M at MTAHQ, \$1.9M at B&T, and \$0.9M at SIR, partially offset by an unfavorable variance of (\$4.3M) at MTA Bus.

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**JULY FINANCIAL PLAN - 2017 MID-YEAR FORECAST**  
**EXPLANATION OF VARIANCES BETWEEN MID-YEAR FORECAST AND ACTUAL ACCRUAL BASIS**  
**OCTOBER 2017**  
(\$ in millions)

Generic Revenue or Expense Category	Nonreimb or Reimb	OCTOBER		Reason for Variance	YEAR-TO-DATE		Reason for Variance
		Favorable (Unfavorable)			Favorable (Unfavorable)		
		\$	%		\$	%	
OPEB - Current Payment	NR	9.4	18.9	A mix of favorable rates and timing were responsible for costs being lower by \$8.2M at NYCT and \$0.6M at MTA Bus. The LIRR was favorable by \$1.0M mainly due to fewer retirees.	20.5	4.2	NYCT and MTA Bus were favorable by \$11.8M and \$2.9M, respectively, primarily due to a mix of favorable rates and timing, while the LIRR was favorable by \$7.6M mainly due to fewer retirees. These results were partially offset by an unfavorable variance of (\$1.3M) at MNR due to additional retirees.
Pensions	NR	3.1	2.9	Timing and rates were mainly responsible for favorable variances of \$1.3M at MTAHQ, \$0.9M at the LIRR and \$0.5M at MNR. Other Agency variances were minor.	7.1	0.6	Timing, vacancies and rates were mainly responsible for favorable variances of \$3.6M at MTAHQ, \$1.1M at MTA Bus, \$1.0M at the LIRR, \$0.8M at MNR and \$0.5M at SIR.
Other Fringe Benefits	NR	(2.2)	(3.2)	NYCT was unfavorable by (\$1.8M) due to higher payroll expenses, and the LIRR was unfavorable by (\$1.7M) due to higher FELA indemnity reserves. These results were partially offset by a favorable variance of \$0.6M at MTA Bus due to timing.	(1.8)	(0.2)	Higher payroll expenses and employee claims were responsible for unfavorable variances of (\$7.5M) at NYCT and (\$2.2M) at MNR. These results were partially offset by favorable variances of \$3.8M at MTA Bus due to timing and \$2.7M at the LIRR due to lower railroad retirement taxes. MTAHQ and B&T were favorable by \$0.9M and \$0.7M, respectively, due to higher vacancies.
Reimbursable Overhead	NR	8.2	25.2	Changes in project activity assumptions were mainly responsible for favorable variances of \$4.7M at NYCT, \$2.5M at the LIRR, and \$1.1M at MTAHQ, partially offset by an unfavorable variance of (\$0.6M) at B&T.	8.7	2.2	Changes in project activity assumptions were mainly responsible for favorable variances of \$20.9M at NYCT, \$11.1M at the LIRR, and \$0.6M at MTA Bus, as well as unfavorable variances of (\$22.1M) at MTAHQ and (\$1.8M) at MNR.
Electric Power	NR	1.3	3.6	A mixture of timing, consumption, and rates were responsible for the favorable variances of \$0.8M at the LIRR and \$0.5M at MNR. Other Agency variances were minor.	13.0	3.4	A mix of lower rates, consumption, and timing were responsible for favorable variances of \$7.4M at NYCT, \$3.3M at MNR, \$2.5M at MTAHQ, and \$0.7M at B&T, partially offset by an unfavorable variance of (\$1.1M) at the LIRR due to higher rates and consumption.
Fuel	NR	(1.6)	(13.9)	The overall unfavorable variance was due to higher rates and consumption at NYCT (\$1.5M). Other Agency variances were minor.	(2.2)	(1.8)	The overall unfavorable variance was due to timing, and higher rates and consumption at NYCT (\$5.3M), partially offset by favorable variances of \$1.2M at MTA Bus due to CNG tax credits, and \$1.1M and \$0.5M at MNR and MTAHQ, respectively, as a result of lower rates.
Insurance	NR	4.1	*	Timing was responsible for the favorable variance of which \$3.7M was attributable to FMTAC.	22.3	93.2	Timing is the overall cause for favorable variances of \$18.5M at FMTAC and \$2.6M at MTAHQ. B&T was favorable by \$0.7M due to lower rates and the LIRR was favorable by \$0.5M due to lower liability and property insurance.
Claims	NR	(6.0)	(25.6)	Higher claims resulted in unfavorable variances of (\$4.5M) at FMTAC and (\$1.7M) at MTA Bus.	(61.0)	(23.0)	An actuarial valuation and higher claims were the main drivers of an unfavorable variance of (\$46.2M) at FMTAC. Higher claim costs also resulted in unfavorable variances of (\$8.5M) at MTA Bus, (\$4.1M) at the LIRR, (\$1.5M) at MNR and (\$0.6M) at MTAHQ.
Paratransit Service Contracts	NR	0.7	2.0	Lower expenses due to fewer trips.	2.7	0.8	Lower expenses due to fewer trips.

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**JULY FINANCIAL PLAN - 2017 MID-YEAR FORECAST**  
**EXPLANATION OF VARIANCES BETWEEN MID-YEAR FORECAST AND ACTUAL ACCRUAL BASIS**  
**OCTOBER 2017**  
(\$ in millions)

Generic Revenue or Expense Category	Nonreimb or Reimb	OCTOBER		Reason for Variance	YEAR-TO-DATE		Reason for Variance
		Favorable (Unfavorable)			Favorable (Unfavorable)		
		\$	%		\$	%	
Maintenance and Other Operating Contracts	NR	3.9	5.9	The overall favorable result was mainly attributable to timing: \$3.1M at MTA Bus due to delays in shop programs, facility maintenance and Select Bus Service rollouts; \$2.9M at the LIRR mainly for TVM maintenance, vegetation management, security, elevator/escalator maintenance, janitorial services and Amtrak repair ferry services; \$2.2M at B&T primarily for major maintenance work; \$1.6M at MNR for track maintenance and lower GCT utilities; and \$1.5M at SIR for R-44 fleet maintenance. These results were partially offset by unfavorable variances of (\$5.4M) at NYCT for safety equipment, subway car-related purchases, building-related expenses and non-revenue vehicle maintenance; and (\$2.1M) at MTAHQ for real estate rentals, maintenance at 2 Broadway, and security services.	68.6	11.3	The drivers of the YTD variances for NYCT, MTA Bus, the LIRR, B&T, SIR and MTAHQ were mainly the same as those noted for the month, however, YTD favorable variances are \$14.2M, \$12.4M, \$8.5M, \$5.4M, \$5.3M and \$4.1M, respectively. Additionally, MNR was \$18.6M favorable due to the timing of locomotive overhauls and car repairs related to the 2013 Bridgeport derailment, M-7 systems equipment replacement and maintenance services, as well as lower GCT utilities.
Professional Service Contracts	NR	(15.2)	(28.6)	The overall unfavorable result was mainly attributable to timing: (\$22.3M) at MTAHQ, reflecting accounting adjustments and the impact of timing for data center charges and IT consulting services. This was partially offset by favorable variances of \$3.6M at NYCT due to lower needs for bond-related and other services; \$1.7M at B&T for advertising, engineering and consulting; \$1.0M at MTA Bus due to MTA interagency billings; and \$0.5M at MNR for engineering, consulting and audit services.	65.2	14.8	The drivers of the YTD variances for NYCT, MNR, B&T and MTA Bus are the same as those noted for the month; however, YTD favorable variances are \$16.6M, \$7.6M, \$6.8M, and \$2.8M, respectively. Additionally, MTAHQ was \$22.5M favorable due to the timing of charges related to the Grade Crossing Project, engineering services, IT consulting, professional service contracts, training, promotional expenses, and IT hardware and software expenses, partially offset by timing-related adjustments; and \$8.9M at the LIRR due to the timing of Enterprise Asset Management activities, M-7 propulsion consultants, MTA chargebacks, medical testing and marketing.
Materials & Supplies	NR	0.7	1.2	Changes in project activity levels and maintenance material requirements as well as timing, contributed to the favorable variance of \$5.4M at the LIRR, and the unfavorable variance of (\$4.6M) at NYCT.	39.3	7.4	Changes in project activity levels and maintenance material requirements, as well as timing contributed to the favorable results of \$34.4M at the LIRR (mostly for fleet modifications and Reliability Centered Maintenance activities), \$3.1M at NYCT (mostly inventory & obsolescence adjustments), \$1.7M at MTA Bus (lower general maintenance), \$1.0M at B&T, and \$0.9M at MNR. These results were partially offset by unfavorable variances of (\$1.1M) at SIR due to work related to the Track Tie Replacement Project and (\$0.6M) at MTAHQ due to an expense reclassification.
Other Business Expenses	NR	3.6	21.4	MNR was favorable by \$1.1M due to lower subsidy payments for West of Hudson operations and higher Amtrak recoveries, while higher restitution on property damage, the timing of NYPA loans and decommissioning of rolling stock were responsible for the favorable variance of \$0.9M at the LIRR. B&T was favorable by \$0.9M due to timing.	12.8	7.1	MTAHQ was favorable by \$11.0M mainly reflecting lower costs for the Truck Toll Reduction Program, which was provided to mitigate traffic expected during emergency repair work at Penn Station by Amtrak. The LIRR was favorable by \$2.3M mostly due to the timing of NYPA loans and the decommissioning of rolling stock. NYCT was favorable by \$1.9M due to miscellaneous credits and office supply expenses. B&T was favorable by \$1.6M due to timing; and MTA Bus was favorable by \$0.8M due to lower AFC collection fees and timing. These results were partially offset by unfavorable variances of (\$2.5M) at FMTAC due to higher general & administrative, commissions, and safety-related costs; and (\$2.3M) at MNR due to the write-off of the Grand Central Terminal Truss Expansion Study.

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**JULY FINANCIAL PLAN - 2017 MID-YEAR FORECAST**  
**EXPLANATION OF VARIANCES BETWEEN MID-YEAR FORECAST AND ACTUAL ACCRUAL BASIS**  
**OCTOBER 2017**  
(\$ in millions)

Generic Revenue or Expense Category	Nonreimb or Reimb	OCTOBER		Reason for Variance	YEAR-TO-DATE		Reason for Variance
		Favorable (Unfavorable)			Favorable (Unfavorable)		
		\$	%		\$	%	
Other Expense Adjustments	NR	1.5	33.6	Variance reflects timing differences.	(0.6)	(1.5)	Variance reflects timing differences.
Depreciation	NR	10.4	4.6	Timing differences in project completions and assets reaching beneficial use resulted in favorable variances of \$11.3M at NYCT, \$3.7M at MTAHQ, \$1.0M at MNR, and \$0.7M at the LIRR. These results were partially offset by an unfavorable variance of (\$5.6M) at B&T.	90.8	4.2	Timing differences in project completions and assets reaching beneficial use resulted in favorable variances of \$91.0M at NYCT, \$20.3M at MTAHQ, and \$5.4M at MNR, partially offset by unfavorable variances of (\$21.0M) at B&T, (\$3.1M) at MTA Bus, and (\$1.6M) at SIR.
Other Post-Employment Benefits	NR	2.4	6.7	The GASB adjustment reflects the value associated with the unfunded accrued liability for post employment health benefits. MTA Bus was favorable by \$2.5M.	63.1	4.9	The GASB adjustment reflects the value associated with the unfunded accrued liability for post employment health benefits. NYCT and MTA Bus were favorable by \$51.2M and \$12.3M, respectively. These results were partially offset by an unfavorable variance of (\$0.8M) at the LIRR.
GASB 68 Pension Adjustment	NR	5.7	*	Reflects Agencies' adjustment to account for net pension liability. MTA Bus was favorable by \$5.7M.	21.2	83.1	Reflects Agencies' adjustments to account for net pension liability. MTA Bus and MNR were favorable by \$28.7M and \$6.5M, respectively, partially offset by an unfavorable variance of (\$14.3M) at NYCT.
Environmental Remediation	NR	0.0	(7.2)	No variances.	3.0	62.2	The favorable variance reflects overall lower costs of \$2.5M at MNR and \$0.6M at the LIRR.
<b>Reimbursable revenue and expense activity are primarily influenced by the nature and timing of project activity. Accordingly, variances reflect the impact of the aforementioned influences as well as changes in reimbursement and vacancy assumptions, refinements to project scheduling as well as project delays/accelerations. At MTAHQ, impacts reflect reimbursable directed patrol (police coverage) requirements. The following lists the major contributors of the variance by Agency.</b>							
Capital & Other Reimbursements	R	23.1	12.7	Favorable variances: \$17.1M at the LIRR, \$11.3M at NYCT, and \$3.7M at MTAHQ. Unfavorable variances: (\$4.1M) at MNR, (\$3.0M) at MTA CC, and (\$1.9M) at B&T.	(11.0)	(0.6)	Unfavorable variances: (\$52.0M) at MNR, (\$20.6M) at MTAHQ, (\$17.8M) at MTA CC, and (\$1.1M) at both B&T and MTA Bus. Favorable variances: \$52.4M at NYCT and \$29.1M at the LIRR.
Payroll	R	6.2	9.3	Favorable variances: \$4.9M at NYCT, \$0.9M at MTA CC, and \$0.6M at B&T. Other Agency variances were minor.	32.0	5.4	Favorable variances: \$13.7M at NYCT, \$8.3M at MTA CC, \$6.4M at the LIRR, \$3.1M at MNR, and \$0.8M at MTAHQ. Other Agency variances were minor.
Overtime	R	(13.0)	*	Unfavorable variances: (\$8.3M) at NYCT, (\$4.3M) at the LIRR, and (\$0.7M) at MTAHQ. (See Overtime Decomposition Report for more details)	(44.5)	(24.8)	Unfavorable variances: (\$34.2M) at NYCT, (\$12.0M) at the LIRR, and (\$1.1M) at MTAHQ. Favorable variances: \$1.2M at MNR, \$1.0M at B&T, and \$0.6M at SIR. (See Overtime Decomposition Report for more details)
Health and Welfare	R	(0.5)	(7.5)	Unfavorable variance: (\$0.7M) at the LIRR.	(0.7)	(1.2)	Unfavorable variances: (\$1.6M) at NYCT and (\$1.3M) at the LIRR. Favorable variance: \$1.3M at MNR.
OPEB Current Payment	R	0.1	7.9	Agency variances were minor.	(0.7)	(9.0)	Unfavorable variance: (\$0.7M) at NYCT.
Pensions	R	(0.3)	(3.3)	Unfavorable variance: (\$0.9M) at the LIRR. Other Agency variances were minor.	2.4	2.9	Favorable variances: \$1.6M at MNR, and \$0.8M at both NYCT and MTA CC. Unfavorable variance: (\$1.0M) at the LIRR. Other Agency variances were minor.

**METROPOLITAN TRANSPORTATION AUTHORITY  
JULY FINANCIAL PLAN - 2017 MID-YEAR FORECAST  
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OCTOBER 2017  
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		Favorable (Unfavorable)			Favorable (Unfavorable)		
		\$	%		\$	%	
Other Fringe Benefits	R	(0.2)	(1.1)	Unfavorable variances: (\$1.1M) at the LIRR. Favorable variance: \$0.5M at MTA CC. Other Agency variances were minor.	0.4	0.2	Favorable variances: \$4.9M at MTA CC and \$0.7M at MNR. Unfavorable variances: (3.0M) at the LIRR and (\$2.3M) at NYCT.
Reimbursable Overhead	R	(8.5)	(26.4)	Unfavorable variances: (\$4.7M) at NYCT, (\$2.5M) at the LIRR, and (\$1.5M) at MTAHQ. Favorable variance \$0.6M at B&T. Other Agency variances were minor.	(8.5)	(2.2)	Unfavorable variances: (\$20.9M) at NYCT and (\$11.1M) at the LIRR. Favorable variances: \$22.1M at MTAHQ and \$1.4M at MNR. Other Agency variances were minor.
Electric Power	R	(0.7)	*	Unfavorable variance was (\$0.6M) at the LIRR. Other Agency variances were minor.	(0.8)	*	Unfavorable variance was (\$1.0M) at the LIRR. Other Agency variances were minor.
Insurance	R	(0.1)	(8.5)	Agency variances were minor.	0.3	3.0	Favorable variance: \$0.9M at the LIRR. Unfavorable variance: (\$0.6M) at MNR.
Maintenance and Other Operating Contracts	R	(0.5)	(7.3)	Unfavorable variances: \$0.8M at both the LIRR and NYCT. Favorable variances: \$0.7M at MNR and \$0.5M at MTA CC.	(3.4)	(6.2)	Unfavorable variances: (\$3.9M) at NYCT and (\$0.7M) at MNR. Favorable variance: \$1.3M at the LIRR. Other Agency variance was minor.
Professional Service Contracts	R	3.0	32.7	Favorable variances: \$3.6M at MNR and \$0.8M at MTA CC. Unfavorable variance: (\$0.9M) at NYCT. Other Agency variances were minor.	19.8	30.3	Favorable variances: \$20.7M at MNR and \$3.3M at MTA CC. Unfavorable variances: (\$1.7M) at MTAHQ, (\$1.3M) at the LIRR and (\$1.0M) at NYCT.
Materials & Supplies	R	(6.5)	(47.9)	Unfavorable variances: (\$5.7M) at the LIRR and (\$1.1M) at NYCT. Other Agency variances were minor.	16.2	11.4	Favorable variances: \$23.5M at MNR and \$0.5M at MTA Bus. Unfavorable variances: (\$6.2M) at the LIRR and (\$1.6M) at NYCT.
Other Business Expenses	R	(0.6)	*	Unfavorable variance: (\$0.5M) at NYCT.	(1.7)	*	Unfavorable variances: (\$1.2M) at NYCT and (\$0.7M) at the LIRR.
Subsidies	NR	(1.6)	(0.6)	The slightly unfavorable variance for October mainly reflected lower City Subsidy to MTA Bus (\$2.4 million) and CDOT Subsidies (\$1.1 million) both primarily due to timing, and lower MRT-2 (\$0.9 million). This was partially offset by favorable PMT (\$3.0 million).	(46.9)	(0.8)	The unfavorable YTD variance mainly reflected lower City Subsidy to MTA Bus (\$43.9 million) due to timing delays of reimbursements from New York City and unfavorable Urban Tax transactions (\$31.5 million) due to lower real estate activity in New York City. This was partially offset by higher PMT (\$25.7 million) mostly due to timing and higher MRT-1 transactions (\$9.4 million).
Debt Service	NR	(49.0)	(23.6)	Unfavorable variance of \$49.0 million mainly attributed to timing of debt service deposits and partial prefunding of November 2017 debt service.	(24.3)	(1.1)	Year-to-date unfavorable variance is due to the timing of debt service deposits, and partial prefunding of November 2017 debt service.

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**Overtime Decomposition Report**  
**Mid-Year Forecast vs. Actuals**  
**October 2017**

The attached table presents consolidated results of overtime followed by an overtime legend. For detailed overtime results, please refer to the Agency reports located in the financial reporting sections of Agency operating committee agendas.

Below is a summary of only the major consolidated variances.

**2017 OVERTIME REPORTING - PRELIMINARY OCTOBER RESULTS**

**Month – Non-Reimbursable**

Total overtime was (\$24.2M), or (36.5%), unfavorable to the Mid-Year Forecast.

*Programmatic/Routine Maintenance* was (\$16.3M) unfavorable, reflecting expedited and newly prioritized track and fleet work as the Subway Action Plan advances at NYCT (\$14.0M); higher facility maintenance and infrastructure repair work at MNR (\$0.8M); increased support by the Engineering Department for the installation of timber tracks, right-of-way maintenance, and third rail replacement parts at the LIRR (\$0.6M); and higher levels of bus shop work due to increased requirements for maintaining overage buses in service at MTA Bus (\$0.6M).

*Unscheduled Service* was (\$5.7M) unfavorable, primarily due to the impact of subway service delays and overcrowding at NYCT (\$5.7M).

*Vacancy/Absentee Coverage* was (\$2.0M) unfavorable, mainly due to coverage required for bus operators and bus maintainers as well as elevator & escalator and electronics maintenance division maintainers at NYCT (\$1.1M); lower availability within the Equipment and Stations Department at the LIRR (\$0.6M); and the implementation of a two-car MTA Police Department (MTA PD) detail dispatched to every district command as well as vacation and vacancy coverage at MTAHQ (\$0.4M). These results were partially offset by a favorable variance of \$0.4M at B&T.

**MONTH - REIMBURSABLE**

*Reimbursable Overtime* exceeded the budget by (\$13.0M), mostly due to the Subway Track Program at NYCT (\$8.3M); Speonk to Montauk signal construction, East Side Access, the East Rail Yard and Main Line Double Track projects at the LIRR (\$4.3M); and increased police coverage and patrols performed by MTA PD at MTAHQ (\$0.7M).



**METROPOLITAN TRANSPORTATION AUTHORITY**  
**Overtime Decomposition Report**  
**Mid-Year Forecast vs. Actuals**  
**October 2017**

**YTD – Non-Reimbursable**

Total overtime was (\$79.0M), or (11.7%), unfavorable to the Mid-Year Forecast.

*Programmatic/Routine Maintenance* was (\$51.6M) unfavorable, reflecting the impact of higher levels of track, signals, infrastructure and stations maintenance as well as the implementation of the Subway Action Plan at NYCT (\$44.1M). Coverage necessitated by increased workload of the Engineering Department was driven by continuous welded rail work, Harold-Interlocking infrastructure maintenance, thermite welding, the removal of rails, ties and debris along the right-of-way, Amtrak/LIRR emergency repair work and the installation of timber tracks at the LIRR (\$5.1M). Ongoing delays in the delivery of new fleet and increased need for providing shuttle service required higher levels of bus shop work at MTA Bus (\$2.7M). The overage at B&T was (\$0.9M). These results were partially offset by lower infrastructure repair work in Maintenance of Way and reduced Reliability Centered Maintenance (RCM) at MNR, \$1.2M.

*Unscheduled Service* was (\$16.3M) unfavorable, as noted previously, coverage was necessitated primarily as a result of conditions that caused for subway service delays and overcrowding at NYCT (\$16.3M) as well as increased traffic and shuttle service at MTA Bus (\$0.6M). These results were partially offset by a favorable variance of \$0.5M at the LIRR.

*Vacancy/Absentee Coverage* was (\$7.4M) unfavorable, mainly due to coverage required for bus operators, maintainers, track workers and station agents at NYCT (\$9.4M); and the implementation of a two-car MTA PD detail in every district and coverage necessitated by increased retirements, vacations and vacancies at MTAHQ (\$2.2M). These results were partially offset by lower costs associated with Amtrak/LIRR emergency repair work and improved employee availability within the Transportation and Station Departments at the LIRR, \$4.0M; and lower vacation, sick, and vacancy coverage requirements at MNR, \$0.5M.

*Other* was (\$4.8M) unfavorable, mainly due to timing differences related to payroll and calendar cutoff dates at MNR (\$2.5M); the impact of double-time and higher rated craft work at the LIRR (\$0.6M); and timing at NYCT (\$0.6M).

*Scheduled Service* was (\$1.1M) unfavorable, reflecting higher running time at MTA Bus (\$1.2M); higher crew book overtime within the Transportation Department at the LIRR (\$1.0M); and service coverage requirements at MNR (\$0.9M). These results were partially offset by a favorable variance of \$1.7M at NYCT.

*Unscheduled Maintenance* was (\$0.7M) unfavorable, mainly due to the timing of expenses for Amtrak/LIRR emergency track work at NYCT (\$0.5M).

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**Overtime Decomposition Report**  
**Mid-Year Forecast vs. Actuals**  
**October 2017**

*Safety/Security/Law Enforcement* was \$2.1M favorable, primarily due to less MTA PD coverage required for the LIRR/Amtrak emergency repair work, \$1.4M at MTAHQ and \$0.5M at NYCT.

*Weather Emergencies* was \$0.8M favorable, mostly due to fewer weather events than forecasted at MNR and the LIRR (\$0.8M and \$0.6M, respectively), partially offset by higher expenses at NYCT (\$0.7M) due to heat related issues and water conditions that occurred during the summer months.

**YTD - REIMBURSABLE**

*Reimbursable Overtime* exceeded the forecast by (\$44.5M), mostly due to the Subway Track Program at NYCT (\$34.2M); Main Line double track, Hicksville Station improvements, East Side Access, East Rail Yard and Jamaica capacity improvements at the LIRR (\$12.0M) and increased police coverage and patrols performed by MTA PD at MTAHQ (\$1.1M). These results were partially offset by favorable variances of \$1.2M at MNR, reflecting lower activity in the Cyclical Track Program, and \$1.0M at B&T due to the timing of capital program reimbursements.

**Metropolitan Transportation Authority**  
**2017 July Financial Plan**  
**Non-Reimbursable/Reimbursable Overtime**  
(\$ in millions)

	October			October Year-to-Date		
	Mid-Year Forecast	Actuals	Var. - Fav./(Unfav)	Mid-Year Forecast	Actuals	Var. - Fav./(Unfav)
<b>NON-REIMBURSABLE OVERTIME</b>						
<u>Scheduled Service</u>	\$19.4	\$19.7	(\$0.4) (1.8%)	\$188.1	\$189.2	(\$1.1) -0.6%
<u>Unscheduled Service</u>	\$12.0	\$17.7	(\$5.7) (47.4%)	\$114.3	\$130.6	(\$16.3) (14.3%)
<u>Programmatic/Routine Maintenance</u>	\$21.8	\$38.1	(\$16.3) (74.8%)	\$194.3	\$245.9	(\$51.6) (26.6%)
<u>Unscheduled Maintenance</u>	\$0.2	\$0.3	(\$0.2) *	\$5.5	\$6.2	(\$0.7) (11.9%)
<u>Vacancy/Absentee Coverage</u>	\$9.2	\$11.2	(\$2.0) (21.3%)	\$111.1	\$118.5	(\$7.4) (6.7%)
<u>Weather Emergencies</u>	\$0.7	\$0.4	\$0.3 45.7%	\$33.1	\$32.2	\$0.8 2.5%
<u>Safety/Security/Law Enforcement</u>	\$0.9	\$0.9	(\$0.0) (3.9%)	\$13.2	\$11.1	\$2.1 15.7%
<u>Other</u>	\$2.1	\$2.1	\$0.0 .4%	\$15.1	\$19.9	(\$4.8) (32.1%)
Subtotal	\$66.2	\$90.4	(\$24.2) (36.5%)	\$674.7	\$753.7	(\$79.0) (11.7%)
<b>REIMBURSABLE OVERTIME</b>	\$12.7	\$25.7	(\$13.0)	\$179.2	\$223.7	(\$44.5)
<b>TOTAL OVERTIME</b>	<b>\$78.9</b>	<b>\$116.1</b>	<b>(\$37.1)</b>	<b>\$853.9</b>	<b>\$977.4</b>	<b>(\$123.5)</b>

\* Exceeds 100%

NOTES: Totals may not add due to rounding.

Percentages are based on each type of Overtime and not on Total Overtime.

SIR Overtime data is included in "Other"

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**2017 Overtime Reporting**  
**Overtime Legend**

**Type**

**Definition**

<i>Scheduled Service</i>	Crew book/Regular Run/Shift hours (above 8 hours) required by train crews, bus/tower/block operators, transportation supervisors/dispatchers, fare sales and collection, Train & Engineers, as well as non-transportation workers whose work is directly related to providing service (includes coverage for holidays).
<i>Unscheduled Service</i>	Service coverage resulting from extraordinary events not related to weather, such as injuries, mechanical breakdowns, unusual traffic, tour length, late tour relief, and other requirements that arise that are non-absence related.
<i>Programmatic/Routine Maintenance</i>	<i>Program Maintenance</i> work for which overtime is planned (e.g. Railroad Tie Replacement, Sperry Rail Testing, Running Board Replacement Programs). This also includes <i>Routine Maintenance</i> work for which OT has been planned, as well as all other maintenance <u>not</u> resulting from extraordinary events, including running repairs. Program/Routine maintenance work is usually performed during hours that are deemed more practical in order to minimize service disruptions, and includes contractual scheduled pay over 8 hours.
<i>Unscheduled Maintenance</i>	Resulting from an <u>extraordinary event</u> (not weather-related) requiring the use of unplanned maintenance to perform repairs on trains, buses, subway and bus stations, depots, tracks and administrative and other facilities, including derailments, tour length and weekend coverage.
<i>Vacancy/Absentee Coverage</i>	Provides coverage for an absent employee or a vacant position.
<i>Weather Emergencies</i>	Coverage necessitated by extreme weather conditions (e.g. snow, flooding, hurricane, and tornadoes), as well as preparatory and residual costs.
<i>Safety/Security/Law Enforcement</i>	Coverage required to provide additional customer & employee protection and to secure MTA fleet facilities, transportation routes, and security training.
<i>Other</i>	Includes overtime coverage for clerical, administrative positions that are eligible for overtime, and miscellaneous overtime.
<i>Reimbursable Overtime</i>	Overtime incurred to support projects that are reimbursed from the MTA Capital Program and other funding sources.

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**July Financial Plan - 2017 Mid-Year Forecast**  
**Consolidated Accrual Subsidy Detail**  
**October 2017**  
(\$ in millions)

	Current Month			Year-to-Date		
	Mid-Year Forecast	Actual	Variance	Mid-Year Forecast	Actual	Variance
<b>Accrued Subsidies:</b>						
<b><i>Dedicated Taxes</i></b>						
Mass Transportation Operating Assistance Fund (MMTOA)	\$0.0	\$0.0	\$0.0	\$1,668.0	\$1,668.0	\$0.0
Petroleum Business Tax	0.0	-	-	451.5	453.1	1.6
MRT 1 (Gross)	25.3	25.9	0.6	252.9	262.3	9.4
MRT 2 (Gross)	12.1	11.2	(0.9)	115.9	116.5	0.7
Other MRT(b) Adjustments	-	-	-	-7.3	(7.3)	-
Urban Tax	50.9	50.9	-	474.9	443.3	(31.5)
Investment Income	-	-	-	0.9	0.9	-
	<b>\$88.3</b>	<b>\$87.9</b>	<b>(\$0.4)</b>	<b>\$2,956.8</b>	<b>\$2,936.9</b>	<b>(\$19.9)</b>
<b><i>New State Taxes and Fees</i></b>						
Payroll Mobility Taxes	41.6	44.6	3.0	1,228.4	1,254.2	25.7
Payroll Mobility Tax Replacement Funds	-	-	-	146.6	146.6	-
MTA Aid Taxes <sup>1</sup>	-	-	-	225.1	224.2	(0.9)
	<b>\$41.6</b>	<b>\$44.6</b>	<b>\$3.0</b>	<b>\$1,600.1</b>	<b>\$1,624.9</b>	<b>\$24.8</b>
<b><i>State and Local Subsidies</i></b>						
NYS Operating Assistance	-	-	-	187.9	187.9	-
NYC and Local 18b:						
New York City	-	-	-	125.5	125.5	-
Nassau County	-	-	-	11.6	11.6	-
Suffolk County	-	-	-	7.5	7.5	-
Westchester County	-	-	-	7.3	7.3	-
Putnam County	-	-	-	0.4	0.4	-
Dutchess County	-	-	-	0.4	0.4	-
Orange County	-	-	-	0.1	0.1	-
Rockland County	-	-	-	0.0	0.0	-
Station Maintenance	14.6	13.8	(0.7)	140.4	137.5	(2.9)
	<b>\$14.6</b>	<b>\$13.8</b>	<b>(\$0.7)</b>	<b>\$481.3</b>	<b>\$478.3</b>	<b>(2.9)</b>
<b>Sub-total Dedicated Taxes &amp; State and Local Subsidies</b>	<b>\$144.4</b>	<b>\$146.3</b>	<b>\$1.9</b>	<b>\$5,038.1</b>	<b>\$5,040.1</b>	<b>\$2.0</b>
<b><i>Other Funding Adjustments</i></b>						
City Subsidy to MTA Bus	33.1	30.6	(2.4)	423.1	379.2	(43.9)
City Subsidy to SIRTOA	66.0	66.0	-	66.0	66.0	-
CDOT Subsidies	11.5	10.4	(1.1)	96.0	90.9	(5.1)
<b>Total Dedicated Taxes &amp; State and Local Subsidies</b>	<b>\$255.0</b>	<b>\$253.4</b>	<b>(\$1.6)</b>	<b>\$5,623.2</b>	<b>\$5,576.3</b>	<b>(\$46.9)</b>
B&T Operating Surplus Transfer	59.2	72.8	13.5	605.1	645.7	40.6
<b>Total Accrued Subsidies</b>	<b>\$314.21</b>	<b>\$326.1</b>	<b>\$11.9</b>	<b>\$6,228.3</b>	<b>\$6,222.0</b>	<b>(\$6.4)</b>

<sup>1</sup> License, Vehicle Registration, Taxi and Auto Rental Fees  
Note: Differences are due to rounding.

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**July Financial Plan - 2017 Mid-Year Forecast**  
**Consolidated Accrual Subsidy Detail**  
**Explanation of Variances**  
(\$ in millions)

**October 2017**

<b>Accrued Subsidies</b>	<b>Variance \$</b>	<b>Variance %</b>	<b>Explanations</b>
MRT(b) 1 (Gross)	0.6	2.2%	MRT-1 transactions were slightly above budget for the month and YTD due to higher-than-expected mortgage activity.
MRT(b) 2 (Gross)	(0.9)	-7.5%	MRT-2 transactions were slightly below the forecast for the month; however, YTD transactions were close to the forecast.
Payroll Mobility Taxes	3.0	7.2%	PMT transactions for the month were above the forecast due mostly to timing of accruals by MTA Accounting. Year-to-date variance was close to the target.
CDOT	(1.1)	-9.5%	Variances for the month and YTD were mostly timing related.
Station Maintenance	(0.7)	-5.0%	Variances for the month and YTD were mostly timing related.
City Subsidy to MTA Bus	(2.4)	-7.3%	Variance was mostly timing related. Drawdowns are related to the timing of cash obligations for MTA Bus.
B&T Operating Surplus Transfer	13.5	22.8%	The favorable variances for the month and YTD were due to the timing of accruals.

**Year-to-Date**

<b>Accrued Subsidies</b>	<b>Variance \$</b>	<b>Variance %</b>	<b>Explanations</b>
MRT(b) 1 (Gross)	9.4	3.7%	Year-to-date MRT-1 transactions are favorable due to higher-than-expected mortgage activity.
MRT(b) 2 (Gross)	0.7	0.6%	Year-to-date MRT-2 transactions are favorable due to higher-than-expected mortgage activity.
Urban Tax	(31.5)	-6.6%	The YTD variance was due to lower real estate transactions in New York City.
Payroll Mobility Taxes	25.7	2.1%	See explanation for the month.
CDOT Subsidies	(5.1)	-5.3%	See explanation for the month.
Station Maintenance	(2.9)	-2.1%	See explanation for the month.
City Subsidy to MTA Bus	(43.9)	-10.4%	See explanation for the month.
B&T Operating Surplus Transfer	40.6	6.7%	See explanation for the month.

METROPOLITAN TRANSPORTATION AUTHORITY  
July Financial Plan - 2017 Mid-Year Forecast  
Cash Subsidy Detail by Agency  
(\$ in millions)

October 2017

	NYC Transit			Commuter Railroads			SIR			MTA Bus			MTAHQ			TOTAL		
	Mid-Year Forecast	Actual	Variance	Mid-Year Forecast	Actual	Variance	Mid-Year Forecast	Actual	Variance	Mid-Year Forecast	Actual	Variance	Mid-Year Forecast	Actual	Variance	Mid-Year Forecast	Actual	Variance
<b>Cash Subsidies:</b>																		
<b>Dedicated Taxes</b>																		
MMTOA <sup>(a)</sup>	\$133.0	\$133.0	0.0	\$64.5	\$64.5	0.0	\$0.5	\$0.5	0.0	\$0.0	\$0.0	0.0	\$0.0	\$0.0	0.0	\$198.0	\$198.0	0.0
Petroleum Business Tax	51.1	51.9	0.8	9.0	9.2	0.1	-	-	-	-	-	-	-	-	-	60.1	61.0	0.9
MRT <sup>(b)</sup> 1 (Gross)	-	-	-	-	-	-	-	-	-	-	-	-	25.3	24.8	(0.6)	25.3	24.8	(0.6)
MRT <sup>(b)</sup> 2 (Gross)	-	-	-	-	-	-	-	-	-	-	-	-	12.1	11.9	(0.2)	12.1	11.9	(0.2)
Other MRT <sup>(b)</sup> Adjustments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0
Urban Tax	50.9	42.2	(8.7)	-	-	-	-	-	-	-	-	-	-	-	-	50.9	42.2	(8.7)
Investment Income	-	-	-	-	0.3	0.3	-	-	-	-	-	-	-	-	-	0.0	0.3	0.3
	<b>\$234.9</b>	<b>\$227.0</b>	<b>(\$7.9)</b>	<b>\$73.6</b>	<b>\$74.0</b>	<b>\$0.4</b>	<b>\$0.5</b>	<b>\$0.5</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$37.4</b>	<b>\$36.6</b>	<b>(\$0.7)</b>	<b>\$346.4</b>	<b>\$338.1</b>	<b>(\$8.2)</b>
<b>New State Taxes and Fees</b>																		
Payroll Mobility Tax	74.0	62.7	(11.3)	9.7	8.2	(1.5)	-	-	-	-	-	-	37.8	32.0	(5.8)	121.5	103.0	(18.5)
MTA Aid <sup>(c)</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
	<b>\$114.3</b>	<b>\$103.0</b>	<b>(\$11.3)</b>	<b>\$18.3</b>	<b>\$16.8</b>	<b>(\$1.5)</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$37.8</b>	<b>\$32.0</b>	<b>(\$5.8)</b>	<b>\$170.4</b>	<b>\$151.9</b>	<b>(\$18.5)</b>
<b>State and Local Subsidies</b>																		
NYS Operating Assistance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NYC and Local 18b:																		
New York City	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nassau County	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Suffolk County	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Westchester County	-	-	-	-	1.8	1.8	-	-	-	-	-	-	-	-	-	-	1.8	1.8
Putnam County	-	-	-	-	0.1	0.1	-	-	-	-	-	-	-	-	-	-	0.1	0.1
Dutchess County	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orange County	-	-	-	-	0.0	0.0	-	-	-	-	-	-	-	-	-	-	0.0	0.0
Rockland County	-	-	-	-	0.0	0.0	-	-	-	-	-	-	-	-	-	-	0.0	0.0
Station Maintenance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inter-Agency Loan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NYCT Charge Back of MTA Bus Debt Service	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forward Energy Contracts Program - Gain/(Loss)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MNR Repayment for 525 North Broadway	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Committed to Capital 2010-2014 Capital Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Committed to Capital 2015-2019 Capital Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pay-As-You Go Capital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$2.0</b>	<b>\$2.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$2.0</b>	<b>\$2.0</b>
<b>Sub-total Dedicated Taxes &amp; State and Local Subsidies</b>	<b>\$349.2</b>	<b>\$330.0</b>	<b>(\$19.2)</b>	<b>\$91.8</b>	<b>\$92.8</b>	<b>\$0.9</b>	<b>\$0.5</b>	<b>\$0.5</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$75.2</b>	<b>\$68.7</b>	<b>(\$6.5)</b>	<b>\$516.7</b>	<b>\$492.0</b>	<b>(\$24.8)</b>
City Subsidy to MTA Bus	-	-	-	-	-	-	-	-	-	\$50.1	68.2	18.1	-	-	-	50.1	68.2	18.1
City Subsidy to SIRTOA	-	-	-	-	-	-	53.0	53.0	-	-	-	-	-	-	-	53.0	53.0	0.0
CDOT Subsidies	-	-	-	8.3	14.5	6.2	-	-	-	-	-	-	-	-	-	8.3	14.5	6.2
<b>Total Dedicated Taxes &amp; State and Local Subsidies</b>	<b>\$349.2</b>	<b>\$330.0</b>	<b>(\$19.2)</b>	<b>\$100.2</b>	<b>\$107.3</b>	<b>\$7.1</b>	<b>\$53.5</b>	<b>\$53.5</b>	<b>\$0.0</b>	<b>\$50.1</b>	<b>\$68.2</b>	<b>\$18.1</b>	<b>\$75.2</b>	<b>\$68.7</b>	<b>(\$6.5)</b>	<b>\$628.2</b>	<b>\$627.7</b>	<b>(\$0.5)</b>
<b>Inter-Agency Subsidy Transactions</b>																		
B&T Operating Surplus Transfer	19.6	20.8	1.1	27.8	29.6	1.8	-	-	-	-	-	-	-	-	-	47.4	50.4	3.0
	<b>\$19.6</b>	<b>\$20.8</b>	<b>\$1.1</b>	<b>\$27.8</b>	<b>\$29.6</b>	<b>\$1.8</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$47.4</b>	<b>\$50.4</b>	<b>\$3.0</b>
<b>Total Cash Subsidies</b>	<b>\$368.9</b>	<b>\$350.8</b>	<b>(\$18.0)</b>	<b>\$128.0</b>	<b>\$136.9</b>	<b>\$8.9</b>	<b>\$53.5</b>	<b>\$53.5</b>	<b>\$0.0</b>	<b>\$50.1</b>	<b>\$68.2</b>	<b>\$18.1</b>	<b>\$75.2</b>	<b>\$68.7</b>	<b>(\$6.5)</b>	<b>\$675.6</b>	<b>\$678.1</b>	<b>\$2.5</b>

<sup>a</sup> License, Vehicle Registration, Taxi and Auto Rental Fees  
Note: Differences are due to rounding.

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**July Financial Plan - 2017 Mid-Year Forecast**  
**Cash Subsidy Detail by Agency**  
(\$ in millions)

	Year-to-Date																	
	NYC Transit			Commuter Railroads			SIR			MTA Bus			MTAHQ			TOTAL		
	Mid-Year Forecast	Actual	Variance	Mid-Year Forecast	Actual	Variance	Mid-Year Forecast	Actual	Variance	Mid-Year Forecast	Actual	Variance	Mid-Year Forecast	Actual	Variance	Mid-Year Forecast	Actual	Variance
<b>Cash Subsidies:</b>																		
<i><b>Dedicated Taxes</b></i>																		
MMTOA <sup>(a)</sup>	\$646.1	\$646.1	\$0.0	\$313.6	\$313.6	\$0.0	\$2.3	\$2.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$962.0	\$962.0	\$0.0
Petroleum Business Tax	443.4	444.8	1.4	78.2	78.5	0.2	-	-	-	-	-	-	-	-	-	521.6	523.3	1.6
MRT <sup>(b)</sup> 1 (Gross)	-	-	-	-	-	-	-	-	-	-	-	-	260.2	269.1	8.9	260.2	269.1	8.9
MRT <sup>(b)</sup> 2 (Gross)	-	-	-	-	-	-	-	-	-	-	-	-	116.0	117.6	1.6	116.0	117.6	1.6
Other MRT <sup>(b)</sup> Adjustments	-	-	-	-	-	-	-	-	-	-	-	-	(3.8)	(3.8)	(0.0)	(3.8)	(3.8)	(0.0)
Urban Tax	513.4	481.9	(31.5)	-	-	-	-	-	-	-	-	-	-	-	-	513.4	481.9	(31.5)
Investment Income	-	-	-	0.9	1.2	0.3	-	-	-	-	-	-	-	-	-	0.9	1.2	0.3
	<b>\$1,602.9</b>	<b>\$1,572.8</b>	<b>(\$30.1)</b>	<b>\$392.8</b>	<b>\$393.3</b>	<b>\$0.5</b>	<b>\$2.3</b>	<b>\$2.3</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$372.5</b>	<b>\$382.9</b>	<b>\$10.5</b>	<b>\$2,370.4</b>	<b>\$2,351.3</b>	<b>(\$19.1)</b>
<i><b>New State Taxes and Fees</b></i>																		
Payroll Mobility Tax	703.9	702.3	(1.7)	160.9	173.7	12.8	-	-	-	-	-	-	363.5	342.4	(21.2)	1,228.4	1,218.3	(10.1)
MTA Aid <sup>(c)</sup>	183.7	180.7	(3.1)	39.1	39.6	0.5	-	-	-	-	-	-	-	-	-	222.8	220.2	(2.6)
	<b>\$1,048.8</b>	<b>\$1,044.0</b>	<b>(\$4.7)</b>	<b>\$234.3</b>	<b>\$247.5</b>	<b>\$13.2</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$363.5</b>	<b>\$342.4</b>	<b>(\$21.2)</b>	<b>\$1,646.6</b>	<b>\$1,633.9</b>	<b>(\$12.7)</b>
<i><b>State and Local Subsidies</b></i>																		
NYS Operating Assistance	79.1	79.1	(0.0)	14.6	14.6	-	0.3	0.3	0.0	-	-	-	-	-	-	94.0	94.0	-
NYC and Local 18b:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New York City	123.1	123.1	-	1.4	1.4	(0.0)	0.6	0.6	-	-	-	-	-	-	-	125.1	125.1	(0.0)
Nassau County	-	-	-	8.7	8.7	0.0	-	-	-	-	-	-	-	-	-	8.7	8.7	0.0
Suffolk County	-	-	-	5.6	3.8	(1.9)	-	-	-	-	-	-	-	-	-	5.6	3.8	(1.9)
Westchester County	-	-	-	5.5	7.3	1.8	-	-	-	-	-	-	-	-	-	5.5	7.3	1.8
Putnam County	-	-	-	0.3	0.3	(0.0)	-	-	-	-	-	-	-	-	-	0.3	0.3	(0.0)
Dutchess County	-	-	-	0.3	0.3	(0.0)	-	-	-	-	-	-	-	-	-	0.3	0.3	(0.0)
Orange County	-	-	-	0.1	0.4	0.3	-	-	-	-	-	-	-	-	-	0.1	0.4	0.3
Rockland County	-	-	-	0.0	0.0	(0.0)	-	-	-	-	-	-	-	-	-	0.0	0.0	(0.0)
Station Maintenance	-	-	-	166.3	166.5	0.2	-	-	-	-	-	-	-	-	-	166.3	166.5	0.2
Inter-Agency Loan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NYCT Charge Back of MTA Bus Debt Service	(11.5)	(11.5)	-	-	-	-	-	-	-	-	-	-	-	-	-	(11.5)	(11.5)	-
Forward Energy Contracts Program - Gain/(Loss)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MNR Repayment for 525 North Broadway	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Committed to Capital 2010-2014 Capital Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Committed to Capital 2015-2019 Capital Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pay-As-You Go Capital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	<b>\$190.7</b>	<b>\$190.7</b>	<b>(\$0.0)</b>	<b>\$202.9</b>	<b>\$203.3</b>	<b>\$0.4</b>	<b>\$0.8</b>	<b>\$0.8</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$394.4</b>	<b>\$394.8</b>	<b>\$0.4</b>
<b>Sub-total Dedicated Taxes &amp; State and Local Subsidies</b>	<b>\$2,842.3</b>	<b>\$2,807.5</b>	<b>(\$34.9)</b>	<b>\$830.0</b>	<b>\$844.2</b>	<b>\$14.2</b>	<b>\$3.2</b>	<b>\$3.2</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$736.0</b>	<b>\$725.3</b>	<b>(\$10.7)</b>	<b>\$4,411.5</b>	<b>\$4,380.1</b>	<b>(\$31.4)</b>
City Subsidy to MTA Bus	-	-	-	-	-	-	-	-	-	403.6	360.7	(42.9)	-	-	-	403.6	360.7	(42.9)
City Subsidy to Staten Island Railway (SIRTOA)	-	-	-	-	-	-	53.0	53.0	-	-	-	-	-	-	-	53.0	53.0	-
CDOT Subsidies	-	-	-	101.1	104.8	3.8	-	-	-	-	-	-	-	-	-	101.1	104.8	3.8
<b>Total Dedicated Taxes &amp; State and Local Subsidies</b>	<b>\$2,842.3</b>	<b>\$2,807.5</b>	<b>(\$34.9)</b>	<b>\$931.0</b>	<b>\$949.0</b>	<b>\$18.0</b>	<b>\$56.2</b>	<b>\$3.2</b>	<b>(\$53.0)</b>	<b>\$403.6</b>	<b>\$360.7</b>	<b>(\$42.9)</b>	<b>\$736.0</b>	<b>\$725.3</b>	<b>(\$10.7)</b>	<b>\$4,969.2</b>	<b>\$4,898.7</b>	<b>(\$70.5)</b>
<i><b>Inter-Agency Subsidy Transactions</b></i>																		
B&T Operating Surplus Transfer	282.5	256.0	(26.6)	395.4	354.1	(41.3)	-	-	-	-	-	-	-	-	-	678.0	610.1	(67.9)
	<b>\$282.5</b>	<b>\$256.0</b>	<b>(\$26.6)</b>	<b>\$395.4</b>	<b>\$354.1</b>	<b>(\$41.3)</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$678.0</b>	<b>\$610.1</b>	<b>(\$67.9)</b>
<b>Total Cash Subsidies</b>	<b>\$3,124.9</b>	<b>\$3,063.5</b>	<b>(\$61.4)</b>	<b>\$1,326.5</b>	<b>\$1,303.1</b>	<b>(\$23.3)</b>	<b>\$56.2</b>	<b>\$3.2</b>	<b>(\$53.0)</b>	<b>\$403.6</b>	<b>\$360.7</b>	<b>(\$42.9)</b>	<b>\$736.0</b>	<b>\$725.3</b>	<b>(\$10.7)</b>	<b>\$5,647.1</b>	<b>\$5,508.8</b>	<b>(\$138.4)</b>

<sup>1</sup> Metropolitan Mass Transportation Operating Assistance Fund



**METROPOLITAN TRANSPORTATION AUTHORITY**  
**July Financial Plan - 2017 Mid-Year Forecast**  
**Consolidated Subsidy Cash**  
**Explanation of Variances**  
(\$ in millions)

**October 2017**

<b>Cash Subsidies</b>	<b>Variance \$</b>	<b>Variance %</b>	<b>Explanations</b>
MRT <sup>(b)</sup> 1 (Gross)	(0.6)	-2.2%	The variance for the month was slightly unfavorable, however YTD variance was favorable due to higher-than-forecasted mortgage activity.
Urban Tax	(8.7)	-17.1%	Urban Tax receipts for the month and YTD were unfavorable due to lower-than-forecasted real estate activity in New York City.
Payroll Mobility Tax	(18.5)	-15.2%	Payroll Mobility Tax cash receipt was below forecast for the month, but YTD cash receipt was on target.
Westchester County	1.8	>100%	The favorable variances for the month and YTD were due to timing of receipt of payment from the county.
CDOT Subsidies	6.2	73.9%	The variances for the month and YTD were primarily due to timing.
City Subsidy to MTA Bus	18.1	36.1%	The variance for the month was favorable; however, the YTD variance was unfavorable due to timing lags in payments from the City of New York
B&T Operating Surplus Transfer	3.0	6.2%	The variances for the month and YTD were due to the timing of accruals.

**Year-to-Date**

<b>Cash Subsidies</b>	<b>Variance \$</b>	<b>Variance %</b>	<b>Explanations</b>
MRT <sup>(b)</sup> 1 (Gross)	8.9	3.4%	See explanation for the month.
Urban Tax	(31.5)	-17.1%	See explanation for the month.
Payroll Mobility Tax	(10.1)	-0.8%	See explanation for the month.
Suffolk County	(1.9)	>100%	The unfavorable YTD variance was due to timing of receipt of payment from the county.
Westchester County	1.8	>100%	See explanation for the month.
Orange County	0.3	> 100%	The favorable YTD variance was due to timing of receipt of payment from the county.
CDOT Subsidies	3.8	3.7%	See explanation for the month.
City Subsidy to MTA Bus	(42.9)	-10.6%	See explanation for the month.
B&T Operating Surplus Transfer	(67.9)	-10.0%	See explanation for the month.

(millions)

<u>Current Month Stabilization Fund</u>				<u>Year to Date Stabilization Fund</u>		
	<u>Commuter</u>	<u>Transit</u>		<u>Commuter</u>	<u>Transit</u>	
	<u>(General Fd)</u>	<u>(TA Stab)</u>	<u>Total</u>	<u>(General Fd)</u>	<u>(TA Stab)</u>	<u>Total</u>
From Date:	11/01/17	11/01/17	11/01/17	01/01/17	01/01/17	01/01/17
To Date:	11/30/17	11/30/17	11/30/17	11/30/17	11/30/17	11/30/17
<u>Opening Balance</u>	\$0.166	\$80.430	\$80.596	\$177.374	\$69.042	\$246.416
<u>RECEIPTS</u>						
Interest Earnings	0.038	0.230	0.267	-0.094	1.378	1.284
Real Estate Advertising Revenue	0.000	1.502	1.502	0.000	118.729	118.729
<u>New York State</u>						
State and regional mass transit taxes - MMTOA	72.166	149.215	221.381	385.774	797.651	1,183.425
MTTF New York State	6.750	38.250	45.000	85.241	483.030	568.271
Total Dedicated Taxes Received	78.916	187.465	266.381	471.015	1,280.681	1,751.696
Less DTF Debt Service	0.007	0.033	0.040	58.246	286.984	345.230
Net Dedicated Taxes for Operations	78.909	187.432	266.341	412.768	993.698	1,406.466
Payroll Mobility Tax	0.000	0.000	0.000	289.020	940.852	1,229.872
MTA Aid Trust Taxes	0.000	0.000	0.000	51.755	168.480	220.236
New York City Operating Assistance	0.000	0.000	0.000	0.000	123.672	123.672
Operating Assistance - 18b	7.313	39.668	46.981	21.939	119.004	140.943
NYC School Fares	0.000	0.000	0.000	0.000	0.000	0.000
NYS School Fares	0.000	6.313	6.313	0.000	18.938	18.938
Additional Mass Transp Operating Assistance	0.000	n/a	0.000	0.000	n/a	0.000
Total - New York State	\$86.222	\$233.413	\$319.635	\$775.483	\$2,364.645	\$3,140.127
<u>Local</u>						
Dutchess County						
Operating Assistance - 18b	\$0.095	n/a	\$0.095	\$0.475	n/a	\$0.475
Station Maintenance	0.000	n/a	0.000	2.427	n/a	2.427
Nassau County						
Operating Assistance - 18b	2.896	n/a	2.896	11.584	n/a	11.584
Station Maintenance	0.000	n/a	0.000	29.452	n/a	29.452
New York City						
Operating Assistance - 18b	0.468	0.000	0.468	1.872	0.000	1.872
Urban - Real Property & Mortgage Recording Tax	n/a	61.222	61.222	n/a	543.086	543.086
Additional Assistance New York City	n/a	0.000	0.000	n/a	0.000	0.000
Station Maintenance	0.000	n/a	0.000	95.189	n/a	95.189
Orange County						
Operating Assistance - 18b	0.000	n/a	0.000	0.146	n/a	0.146
Station Maintenance	0.000	n/a	0.000	0.502	n/a	0.502
Putnam County						
Operating Assistance - 18b	0.000	n/a	0.000	0.285	n/a	0.285
Station Maintenance	0.000	n/a	0.000	0.000	n/a	0.000
Rockland County						
Operating Assistance - 18b	0.000	n/a	0.000	0.022	n/a	0.022
Station Maintenance	0.000	n/a	0.000	0.053	n/a	0.053
Sulfolk County						
Operating Assistance - 18b	1.879	n/a	1.879	7.518	n/a	7.518
Station Maintenance	0.000	n/a	0.000	18.153	n/a	18.153
Westchester County						
Operating Assistance - 18b	0.000	n/a	0.000	7.342	n/a	7.342
Station Maintenance	0.000	n/a	0.000	20.355	n/a	20.355
Total - Local	\$5.338	\$61.222	\$66.560	\$195.376	\$543.086	\$738.462

	<u>Current Month Stabilization Fund</u>			<u>Year to Date Stabilization Fund</u>		
	<u>Commuter</u> <u>(General Fd)</u>	<u>Transit</u> <u>(TA Stab)</u>	<u>Total</u>	<u>Commuter</u> <u>(General Fd)</u>	<u>Transit</u> <u>(TA Stab)</u>	<u>Total</u>
From Date:	11/01/17	11/01/17	11/01/17	01/01/17	01/01/17	01/01/17
To Date:	11/30/17	11/30/17	11/30/17	11/30/17	11/30/17	11/30/17
<b><u>MTA Bridges and Tunnels- Surplus Transfers</u></b>	37.048	28.289	65.337	391.156	284.278	675.434
Total Subsidy and Other Receipts	\$128.609	\$322.924	\$451.532	\$1,362.015	\$3,192.008	\$4,554.023
<b><u>MTA Sources for Interagency Loans</u></b>						
Retro Payment Reserve - Fund#1302	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000
MTA Capital Program - Non-Resolution Funds	0.000	0.000	0.000	0.000	0.000	0.000
MRT-2 Corporate Account	0.000	0.000	0.000	0.000	0.000	0.000
Transfer from fund 1030 (NYCTA Op Fund)	0.000	0.000	0.000	0.000	0.000	0.000
Total Loans	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000
<b>Total Receipts and Loans Received</b>	<b>\$128.646</b>	<b>\$324.655</b>	<b>\$453.301</b>	<b>\$1,361.921</b>	<b>\$3,312.115</b>	<b>\$4,674.036</b>

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(millions)

	<u>Current Month Stabilization Fund</u>			<u>Year to Date Stabilization Fund</u>		
	<u>Commuter</u>	<u>Transit</u>	<u>Total</u>	<u>Commuter</u>	<u>Transit</u>	<u>Total</u>
	<u>(General Fd)</u>	<u>(TA Stab)</u>		<u>(General Fd)</u>	<u>(TA Stab)</u>	
From Date:	11/01/17	11/01/17	11/01/17	01/01/17	01/01/17	01/01/17
To Date:	11/30/17	11/30/17	11/30/17	11/30/17	11/30/17	11/30/17
<b><u>Brought forward from prior page</u></b>						
Opening Balance	\$0.166	\$80.430	\$80.596	\$177.374	\$69.042	\$246.416
Total Receipts and Loans Received	128.646	324.655	453.301	1,361.921	3,312.115	4,674.036
Total Cash and Receipts Available	\$128.812	\$405.085	\$533.897	\$1,539.295	\$3,381.156	\$4,920.452
<b><u>DISBURSEMENTS</u></b>						
Revenue Supported Debt Service	17.503	28.210	45.714	518.452	823.264	1,341.717
<b><u>Agency Operations</u></b>						
MTA Long Island Railroad	65.650	0.000	65.650	648.936	0.000	648.936
MTA Metro-North Rail Road	28.085	0.000	28.085	348.453	0.000	348.453
MTA New York City Transit	0.000	301.502	301.502	0.000	2,468.729	2,468.729
MTA NYCT for SIRTOA	0.000	0.171	0.171	0.000	3.190	3.190
MTA Bond Admin Cost	0.000	0.000	0.000	5.880	10.772	16.652
MNR Repayment of 525 North Broadway loan	0.000	0.000	0.000	0.000	0.000	0.000
Retro Payment Reserve - Fund#1300	0.000	0.000	0.000	0.000	0.000	0.000
Capital Program Contribution	0.000	0.000	0.000	0.000	0.000	0.000
Total Debt Service and Operations	\$111.239	\$329.883	\$441.122	\$1,521.722	\$3,305.955	\$4,827.677
<b><u>Repayment of Interagency Loans</u></b>						
Payback - Trans Non-bond - Fd#1028	0.000	0.000	0.000	0.000	0.000	0.000
Transfer to Fund 1030 (NYCTA Op Fund)	0.000	0.000	0.000	0.000	0.000	0.000
MRT-2 Corporate Account	0.000	0.000	0.000	0.000	0.000	0.000
2012 OPEB Loan	0.000	0.000	0.000	0.000	0.000	0.000
Total Loans Payback	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000
Total Disbursements	\$111.239	\$329.883	\$441.122	\$1,521.722	\$3,305.955	\$4,827.677
<b><u>STABILIZATION FUND BALANCE</u></b>	\$17.573	\$75.202	\$92.775	\$17.573	\$75.202	\$92.775
<b><u>Ending Loan Balances</u></b>						
B&T Necessary Reconstruction Reserve	0.000	0.000	0.000	0.000	0.000	0.000
MTA Capital Program - Non-Resolution Funds	0.000	0.000	0.000	0.000	0.000	0.000
MRT-2 Corporate Account	0.000	0.000	0.000	0.000	0.000	0.000
2012 OPEB Loan	0.000	0.000	0.000	0.000	0.000	0.000
	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000
<b><u>End of Month NYCT Operating Fund borrowing from MTA Invest Pool not included in Ending Loan Balances above</u></b>	n/a	\$142.644	\$142.644	n/a	\$142.644	\$142.644
<b><u>Total Loan Balances (including negative Operating and negative Stabilization Fund Balances)</u></b>				-\$17.573	\$67.442	\$49.869

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**JULY FINANCIAL PLAN - Mid-Year Forecast**  
**Debt Service**  
**October 2017**  
(\$ in millions)

	Mid-Year Forecast	Actual	Variance	% Var	Explanation
Dedicated Tax Fund:					
NYC Transit	\$11.9	\$15.7	(\$3.8)		
Commuter Railroads	2.4	3.3	(0.9)		
<b>Dedicated Tax Fund Subtotal</b>	<b>\$14.3</b>	<b>\$19.0</b>	<b>(\$4.7)</b>	<b>-32.6%</b>	Timing of debt service deposits.
MTA Transportation Revenue:					
NYC Transit	\$81.3	\$112.7	(\$31.3)		
Commuter Railroads	54.5	71.1	(16.6)		
MTA Bus	1.8	0.0	1.8		
SIRTOA	0.2	0.0	0.2		
<b>MTA Transportation Revenue Subtotal</b>	<b>\$137.8</b>	<b>\$183.7</b>	<b>(\$45.9)</b>	<b>-33.3%</b>	Timing of debt service deposits as partial prefunding of November 2017 debt service.
MTA Transportation Revenue BANs:					
NYC Transit	\$0.0	\$0.0	\$0.0		
Commuter Railroads	0.0	0.0	0.0		
MTA Bus	0.0	0.0	0.0		
<b>MTA Transp Revenue BANs Subtotal</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>0.0%</b>	
2 Broadway COPs:					
NYC Transit	\$0.0	\$0.4	(\$0.4)		
Bridges & Tunnels	0.0	0.1	(0.1)		
MTA HQ	0.0	0.0	0.0		
Commuter Railroads	0.0	0.1	(0.1)		
<b>2 Broadway COPs Subtotal</b>	<b>\$0.0</b>	<b>\$0.6</b>	<b>(\$0.6)</b>	<b>0.0%</b>	
TBTA General Resolution (2):					
NYC Transit	\$14.9	\$15.8	(\$0.9)		
Commuter Railroads	7.0	7.1	(0.2)		
Bridges & Tunnels	23.5	20.5	3.0		
<b>TBTA General Resolution Subtotal</b>	<b>\$45.4</b>	<b>\$43.4</b>	<b>\$2.0</b>	<b>4.3%</b>	Lower than budgeted variable rates and timing of debt service deposits.
TBTA Subordinate (2):					
NYC Transit	\$5.6	\$5.5	\$0.1		
Commuter Railroads	2.5	2.5	0.0		
Bridges & Tunnels	2.2	2.1	0.2		
<b>TBTA Subordinate Subtotal</b>	<b>\$10.3</b>	<b>\$10.1</b>	<b>\$0.3</b>	<b>2.7%</b>	Lower than budgeted variable rates.
<b>Total Debt Service</b>	<b>\$207.8</b>	<b>\$256.8</b>	<b>(\$49.0)</b>	<b>-23.6%</b>	
Debt Service by Agency:					
NYC Transit	\$113.8	\$150.0	(\$36.3)		
Commuter Railroads	66.3	84.1	(17.8)		
MTA Bus	1.8	0.0	1.8		
SIRTOA	0.2	0.0	0.2		
Bridges & Tunnels	25.7	22.6	3.1		
MTAHQ	0.0	0.0	0.0		
<b>Total Debt Service</b>	<b>\$207.8</b>	<b>\$256.8</b>	<b>(\$49.0)</b>	<b>-23.6%</b>	

**Notes:**

(1) Forecasted debt service is calculated based upon projected monthly deposits from available pledged revenues into debt service accounts. Actual payments to bondholders are made from the debt service accounts when due as required for each series of bonds and do not conform to this schedule.

(2) Generally, the calendarization of monthly debt service deposits is calculated by dividing projected annual debt service by 12. Month to month variations ("timing differences") on the existing debt portfolio can occur based upon, among other things, (a) for all bonds, the date when income from the securities in which the debt service accounts are invested becomes available varies, (b) for variable rate financings, differences between (i) the budgeted interest rate and the actual interest rate, (ii) projected interest payment dates to bondholders and actual interest payment dates to bondholders, and (iii) projected monthly funding dates for accrued debt service and actual funding dates, (c) for transactions with swaps, the difference between when MTA/TBTA funds debt service and the receipt of the corresponding swap payment by the counterparty, and difference between rates received and rates paid and (d) for commercial paper, the interest payment date is the date of the maturity of the commercial paper and the dealers set the term of the commercial paper from 1 to 270 days, which is not foreseeable at the time the annual debt service budgets are prepared.

(3) Debt service is allocated among Transit, Commuter, MTA Bus, and TBTA categories based on actual spending of bond proceeds for approved capital projects. Allocation of 2 Broadway COPs is based on occupancy.

Totals may not add due to rounding.

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**JULY FINANCIAL PLAN - Mid-Year Forecast**  
**Debt Service**  
**October 2017 Year-to-Date**  
(\$ in millions)

	Mid-Year Forecast	Actual	Variance	% Var	Explanation
Dedicated Tax Fund:					
NYC Transit	\$280.2	\$287.0	(\$6.8)		
Commuter Railroads	55.9	58.2	(2.3)		
<b>Dedicated Tax Fund Subtotal</b>	<b>\$336.1</b>	<b>\$345.2</b>	<b>(\$9.1)</b>	<b>-2.7%</b>	
MTA Transportation Revenue:					
NYC Transit	\$755.8	\$779.7	(\$23.9)		
Commuter Railroads	494.8	499.8	(5.0)		
MTA Bus	8.9	0.0	8.9		
SIRTOA	0.8	0.0	0.8		
<b>MTA Transportation Revenue Subtotal</b>	<b>\$1,260.3</b>	<b>\$1,279.5</b>	<b>(\$19.2)</b>	<b>-1.5%</b>	
MTA Transportation Revenue BANs:					
NYC Transit	\$0.0	\$0.0	\$0.0		
Commuter Railroads	0.0	0.0	0.0		
MTA Bus	0.0	0.0	0.0		
<b>MTA Transp Revenue BANs Subtotal</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>0.0%</b>	
2 Broadway COPs:					
NYC Transit	\$1.9	\$4.1	(\$2.2)		
Bridges & Tunnels	0.3	0.6	(0.3)		
MTA HQ	0.0	0.0	0.0		
Commuter Railroads	0.6	1.2	(0.7)		Timing of debt service deposits.
<b>2 Broadway COPs Subtotal</b>	<b>\$2.8</b>	<b>\$5.9</b>	<b>(\$3.2)</b>	<b>-114.8%</b>	
TBTA General Resolution (2):					
NYC Transit	\$148.7	\$149.4	(\$0.7)		
Commuter Railroads	69.9	69.7	0.2		
Bridges & Tunnels	230.8	221.6	9.2		
<b>TBTA General Resolution Subtotal</b>	<b>\$449.4</b>	<b>\$440.7</b>	<b>\$8.7</b>	<b>1.9%</b>	
TBTA Subordinate (2):					
NYC Transit	\$55.3	\$56.1	(\$0.8)		
Commuter Railroads	24.3	24.8	(0.5)		
Bridges & Tunnels	21.8	22.0	(0.1)		
<b>TBTA Subordinate Subtotal</b>	<b>\$101.5</b>	<b>\$102.9</b>	<b>(\$1.5)</b>	<b>-1.4%</b>	
<b>Total Debt Service</b>	<b>\$2,150.0</b>	<b>\$2,174.3</b>	<b>(\$24.3)</b>	<b>-1.1%</b>	
Debt Service by Agency:					
NYC Transit	\$1,241.9	\$1,276.3	(\$34.5)		
Commuter Railroads	645.5	653.8	(8.3)		
MTA Bus	8.9	0.0	8.9		
SIRTOA	0.8	0.0	0.8		
Bridges & Tunnels	253.0	244.2	8.8		
MTAHQ	0.0	0.0	0.0		
<b>Total Debt Service</b>	<b>\$2,150.0</b>	<b>\$2,174.3</b>	<b>(\$24.3)</b>	<b>-1.1%</b>	

**Notes:**

(1) Forecasted debt service is calculated based upon projected monthly deposits from available pledged revenues into debt service accounts. Actual payments to bondholders are made from the debt service accounts when due as required for each series of bonds and do not conform to this schedule.

(2) Generally, the calendarization of monthly debt service deposits is calculated by dividing projected annual debt service by 12. Month to month variations ("timing differences") on the existing debt portfolio can occur based upon, among other things, (a) for all bonds, the date when income from the securities in which the debt service accounts are invested becomes available varies, (b) for variable rate financings, differences between (i) the budgeted interest rate and the actual interest rate, (ii) projected interest payment dates to bondholders and actual interest payment dates to bondholders, and (iii) projected monthly funding dates for accrued debt service and actual funding dates, (c) for transactions with swaps, the difference between when MTA/TBTA funds debt service and the receipt of the corresponding swap payment by the counterparty, and difference between rates received and rates paid and (d) for commercial paper, the interest payment date is the date of the maturity of the commercial paper and the dealers set the term of the commercial paper from 1 to 270 days, which is not foreseeable at the time the annual debt service budgets are prepared.

(3) Debt service is allocated among Transit, Commuter, MTA Bus, and TBTA categories based on actual spending of bond proceeds for approved capital projects. Allocation of 2 Broadway COPs is based on occupancy.

Totals may not add due to rounding.

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**July Financial Plan - 2017 Mid-Year Forecast**  
**Total Positions by Function and Agency**  
**October 2017**

<b>Function/Agency</b>	<b>Mid-Year Forecast</b>	<b>Actual</b>	<b>Variance Favorable/ (Unfavorable)</b>
<b>Administration</b>	<b>5,000</b>	<b>4,519</b>	<b>481</b>
NYC Transit	1,431	1,400	31
Long Island Rail Road	506	454	52
Metro-North Railroad	556	513	43
Bridges & Tunnels	92	84	8
Headquarters	2,219	1,918	301
Staten Island Railway	29	28	1
Capital Construction Company	16	14	2
Bus Company	151	108	43
<b>Operations</b>	<b>32,058</b>	<b>31,409</b>	<b>649</b>
NYC Transit	24,206	23,697	509
Long Island Rail Road	2,532	2,521	11
Metro-North Railroad	2,065	1,975	90
Bridges & Tunnels	586	483	103
Headquarters	-	-	-
Staten Island Railway	107	109	(2)
Capital Construction Company	-	-	-
Bus Company	2,562	2,624	(62)
<b>Maintenance</b>	<b>31,993</b>	<b>31,840</b>	<b>153</b>
NYC Transit	22,065	22,046	19
Long Island Rail Road	4,215	4,158	57
Metro-North Railroad	3,974	3,916	58
Bridges & Tunnels	382	379	3
Headquarters	-	-	-
Staten Island Railway	180	184	(4)
Capital Construction Company	-	-	-
Bus Company	1,177	1,157	20
<b>Engineering/Capital</b>	<b>2,111</b>	<b>2,064</b>	<b>47</b>
NYC Transit	1,358	1,425	(67)
Long Island Rail Road	211	183	28
Metro-North Railroad	117	113	4
Bridges & Tunnels	253	203	50
Headquarters	-	-	-
Staten Island Railway	14	9	5
Capital Construction Company	121	107	14
Bus Company	37	24	13
<b>Public Safety</b>	<b>1,828</b>	<b>1,745</b>	<b>83</b>
NYC Transit	654	651	3
Long Island Rail Road	-	-	-
Metro-North Railroad	-	-	-
Bridges & Tunnels	276	268	8
Headquarters	873	803	70
Staten Island Railway	-	-	-
Capital Construction Company	-	-	-
Bus Company	25	23	2
<b>Total Positions</b>	<b>72,990</b>	<b>71,577</b>	<b>1,413</b>

**METROPOLITAN TRANSPORTATION AUTHORITY**  
**July Financial Plan - 2017 Mid-Year Forecast**  
**Total Positions by Function and Agency**  
**October 2017**

<b>Category</b>	<b>Mid-Year Forecast</b>	<b>Actual</b>	<b>Variance Favorable/ (Unfavorable)</b>
<b>Total Positions</b>	<b>72,990</b>	<b>71,577</b>	<b>1,413</b>
NYC Transit	49,714	49,219	495
Long Island Rail Road	7,464	7,316	148
Metro-North Railroad	6,712	6,517	195
Bridges & Tunnels	1,589	1,417	172
Headquarters	3,092	2,721	371
Staten Island Railway	330	330	-
Capital Construction Company	137	121	16
Bus Company	3,952	3,936	16
<b>Non-reimbursable</b>	<b>64,805</b>	<b>64,357</b>	<b>449</b>
NYC Transit	44,061	44,157	(96)
Long Island Rail Road	6,034	6,047	(13)
Metro-North Railroad	5,954	5,929	26
Bridges & Tunnels	1,502	1,330	172
Headquarters	3,026	2,671	355
Staten Island Railway	316	321	(5)
Capital Construction Company	-	-	-
Bus Company	3,912	3,902	10
<b>Reimbursable</b>	<b>8,185</b>	<b>7,220</b>	<b>964</b>
NYC Transit	5,653	5,062	591
Long Island Rail Road	1,430	1,269	161
Metro-North Railroad	758	588	169
Bridges & Tunnels	87	87	-
Headquarters	66	50	16
Staten Island Railway	14	9	5
Capital Construction Company	137	121	16
Bus Company	40	34	6
<b>Total Full Time</b>	<b>72,774</b>	<b>71,343</b>	<b>1,431</b>
NYC Transit	49,514	48,997	517
Long Island Rail Road	7,464	7,316	148
Metro-North Railroad	6,711	6,516	195
Bridges & Tunnels	1,589	1,417	172
Headquarters	3,092	2,721	371
Staten Island Railway	330	330	-
Capital Construction Company	137	121	16
Bus Company	3,937	3,925	12
<b>Total Full-Time Equivalents</b>	<b>216</b>	<b>234</b>	<b>(18)</b>
NYC Transit	200	222	(22)
Long Island Rail Road	-	-	-
Metro-North Railroad	1	1	-
Bridges & Tunnels	-	-	-
Headquarters	-	-	-
Staten Island Railway	-	-	-
Capital Construction Company	-	-	-
Bus Company	15	11	4

**Note: Totals may differ due to rounding**



**METROPOLITAN TRANSPORTATION AUTHORITY**  
**July Financial Plan - 2017 Mid-Year Forecast**  
**Total Positions by Function and Occupational Group**  
**October 2017**

<b>FUNCTION/OCCUPATIONAL GROUP</b>	<b>Mid-Year Forecast</b>	<b>Actual</b>	<b>Variance Favorable/ (Unfavorable)</b>
<b>Administration</b>	<b>5,000</b>	<b>4,519</b>	<b>481</b>
Managers/Supervisors	1,708	1,401	307
Professional, Technical, Clerical	3,145	2,983	162
Operational Hourlies	147	134	13
<b>Operations</b>	<b>32,058</b>	<b>31,409</b>	<b>649</b>
Managers/Supervisors	3,931	3,810	121
Professional, Technical, Clerical	908	848	60
Operational Hourlies	27,219	26,751	468
<b>Maintenance</b>	<b>31,993</b>	<b>31,840</b>	<b>153</b>
Managers/Supervisors	5,624	5,525	99
Professional, Technical, Clerical	2,012	1,861	151
Operational Hourlies	24,357	24,453	(96)
<b>Engineering/Capital</b>	<b>2,111</b>	<b>2,064</b>	<b>47</b>
Managers/Supervisors	610	578	32
Professional, Technical, Clerical	1,490	1,478	12
Operational Hourlies	11	8	3
<b>Public Safety</b>	<b>1,828</b>	<b>1,745</b>	<b>83</b>
Managers/Supervisors	509	490	19
Professional, Technical, Clerical	159	140	19
Operational Hourlies	1,160	1,115	45
<b>Total Positions</b>	<b>72,990</b>	<b>71,577</b>	<b>1,413</b>
Managers/Supervisors	12,382	11,804	578
Professional, Technical, Clerical	7,714	7,310	404
Operational Hourlies	52,894	52,461	433

**METROPOLITAN TRANSPORTATION AUTHORITY  
FAREBOX RECOVERY AND FAREBOX OPERATING RATIOS  
2017 MID-YEAR FORECAST AND ACTUALS  
OCTOBER 2017**

<b>FAREBOX RECOVERY RATIOS</b>		
	<b>2017 <u>Mid-Year Forecast</u></b>	<b>2017 <u>YTD Actual</u></b>
New York City Transit	38.2%	38.2%
Staten Island Railway	8.2%	9.1%
Long Island Rail Road	32.3%	33.1%
Metro-North Railroad	41.2%	40.7%
Bus Company	<u>21.9%</u>	<u>25.8%</u>
<b>MTA Agency Average</b>	<b>36.6%</b>	<b>37.0%</b>

<b>FAREBOX OPERATING RATIOS</b>		
	<b>2017 <u>Mid-Year Forecast</u></b>	<b>2017 <u>YTD Actual</u></b>
New York City Transit	57.2%	57.3%
Staten Island Railway	11.3%	12.8%
Long Island Rail Road	48.0%	51.1%
Metro-North Railroad	57.7%	57.6%
Bus Company	<u>31.2%</u>	<u>32.1%</u>
<b>MTA Agency Average</b>	<b>54.1%</b>	<b>54.7%</b>

Farebox recovery ratio has a long-term focus. It includes costs that are not funded in the current year, except in an accounting-ledger sense, but are, in effect, passed on to future years. Those costs include depreciation and interest on long-term debt. Approximately 20% (and sometimes more) of MTA costs are not recovered in the current year from farebox revenues, other operating revenues or subsidies. That is why MTA operating statements generally show deficits. In addition, the recovery ratio allocates centralized MTA services to the Agencies, such as Security, the costs of the Inspector General, Civil Rights, Audit, Risk Management, Legal and Shared Services.

Farebox operating ratio focuses on Agency operating financial performance. It reflects the way MTA meets its statutory and bond-covenant budget-balancing requirements, and it excludes certain cost that are not subject to Agency control, but are provided centrally by MTA.

In the agenda materials for the Meeting of the Metro-North and Long Island Committees, the calculations of the farebox operating and recovery ratios for the LIRR and MNR use a revised methodology to put the railroads on a more comparable basis. Those statistics, which are included in the respective financial and ridership reports of both Agencies, differ from the statistics presented in this table.



**Metropolitan Transportation Authority**

State of New York

New York City Transit  
Long Island Rail Road  
Metro-North Railroad  
Bridges and Tunnels  
Bus Company

## Report on Revenue Passengers and Vehicles Ridership Data Through October, 2017

NOTE: Ridership data are preliminary and subject to revision as well as adjustments warranted by annual audit review.

**Prepared by:**  
**MTA Division of Management & Budget**

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Tuesday, December 05, 2017

Metropolitan Transportation Authority				October	
Revenue Passengers	2015	2016	Percent Change	2017	Percent Change
<b>MTA New York City Transit</b>	218,903,424	205,199,171	-6.26%	207,481,139	1.11%
MTA New York City Subway	159,987,486	150,638,608	-5.84%	153,344,574	1.80%
MTA New York City Bus	58,915,938	54,560,563	-7.39%	54,136,565	-0.78%
<b>MTA Staten Island Railway</b>	435,865	400,281	-8.16%	438,383	9.52%
<b>MTA Long Island Rail Road</b>	7,686,741	7,553,444	-1.73%	7,818,376	3.51%
<b>MTA Metro-North Railroad</b>	7,667,660	7,443,609	-2.92%	7,747,597	4.08%
<b>East of Hudson</b>	7,513,131	7,321,189	-2.55%	7,610,678	3.95%
Harlem Line	2,472,035	2,403,597	-2.77%	2,493,758	3.75%
Hudson Line	1,468,000	1,453,574	-0.98%	1,552,398	6.80%
New Haven Line	3,573,096	3,464,018	-3.05%	3,564,522	2.90%
<b>West of Hudson</b>	154,529	122,420	-20.78%	136,919	11.84%
Port Jervis Line	93,069	76,555	-17.74%	85,570	11.78%
Pascack Valley Line	61,460	45,865	-25.37%	51,349	11.96%
<b>MTA Bus Company</b>	11,333,752	10,831,747	-4.43%	10,879,804	0.44%
<b>MTA Bridges &amp; Tunnels</b>	26,225,167	26,022,431	-0.77%	27,109,361	4.18%
<b>Total All Agencies</b>	<b>246,027,442</b>	<b>231,428,251</b>	<b>-5.93%</b>	<b>234,365,299</b>	<b>1.27%</b>
(Excludes Bridges & Tunnels)					
Weekdays:	21	20		21	
Holidays:	1	1		1	
Weekend Days:	9	10		9	
Days	31	31		31	

Tuesday, December 05, 2017

Metropolitan Transportation Authority				October	
Revenue Passengers Year to Date	2015	2016	Percent Change	2017	Percent Change
<b>MTA New York City Transit</b>	2,010,522,368	1,997,464,149	-0.65%	1,950,145,484	-2.37%
MTA New York City Subway	1,467,195,355	1,462,271,433	-0.34%	1,443,779,922	-1.26%
MTA New York City Bus	543,327,013	535,192,716	-1.50%	506,365,562	-5.39%
<b>MTA Staten Island Railway</b>	3,728,299	3,760,663	0.87%	3,794,913	0.91%
<b>MTA Long Island Rail Road</b>	72,858,849	74,282,585	1.95%	74,452,565	0.23%
<b>MTA Metro-North Railroad</b>	71,387,729	71,840,486	0.63%	72,073,359	0.32%
<b>East of Hudson</b>	69,926,447	70,423,806	0.71%	70,719,267	0.42%
Harlem Line	22,821,772	23,019,973	0.87%	23,187,203	0.73%
Hudson Line	13,668,546	13,793,231	0.91%	14,113,138	2.32%
New Haven Line	33,436,129	33,610,602	0.52%	33,418,926	-0.57%
<b>West of Hudson</b>	1,461,282	1,416,680	-3.05%	1,354,092	-4.42%
Port Jervis Line	870,643	843,513	-3.12%	811,849	-3.75%
Pascack Valley Line	590,639	573,167	-2.96%	542,243	-5.40%
<b>MTA Bus Company</b>	104,550,373	105,099,614	0.53%	102,328,109	-2.64%
<b>MTA Bridges &amp; Tunnels</b>	247,772,789	257,013,379	3.73%	258,120,720	0.43%
<b>Total All Agencies</b>	<b>2,263,047,618</b>	<b>2,252,447,497</b>	<b>-0.47%</b>	<b>2,202,794,430</b>	<b>-2.20%</b>
(Excludes Bridges & Tunnels)					
Weekdays:	210	209		210	
Holidays:	7	7		7	
Weekend Days:	87	89		87	
Days	304	305		304	

Tuesday, December 05, 2017

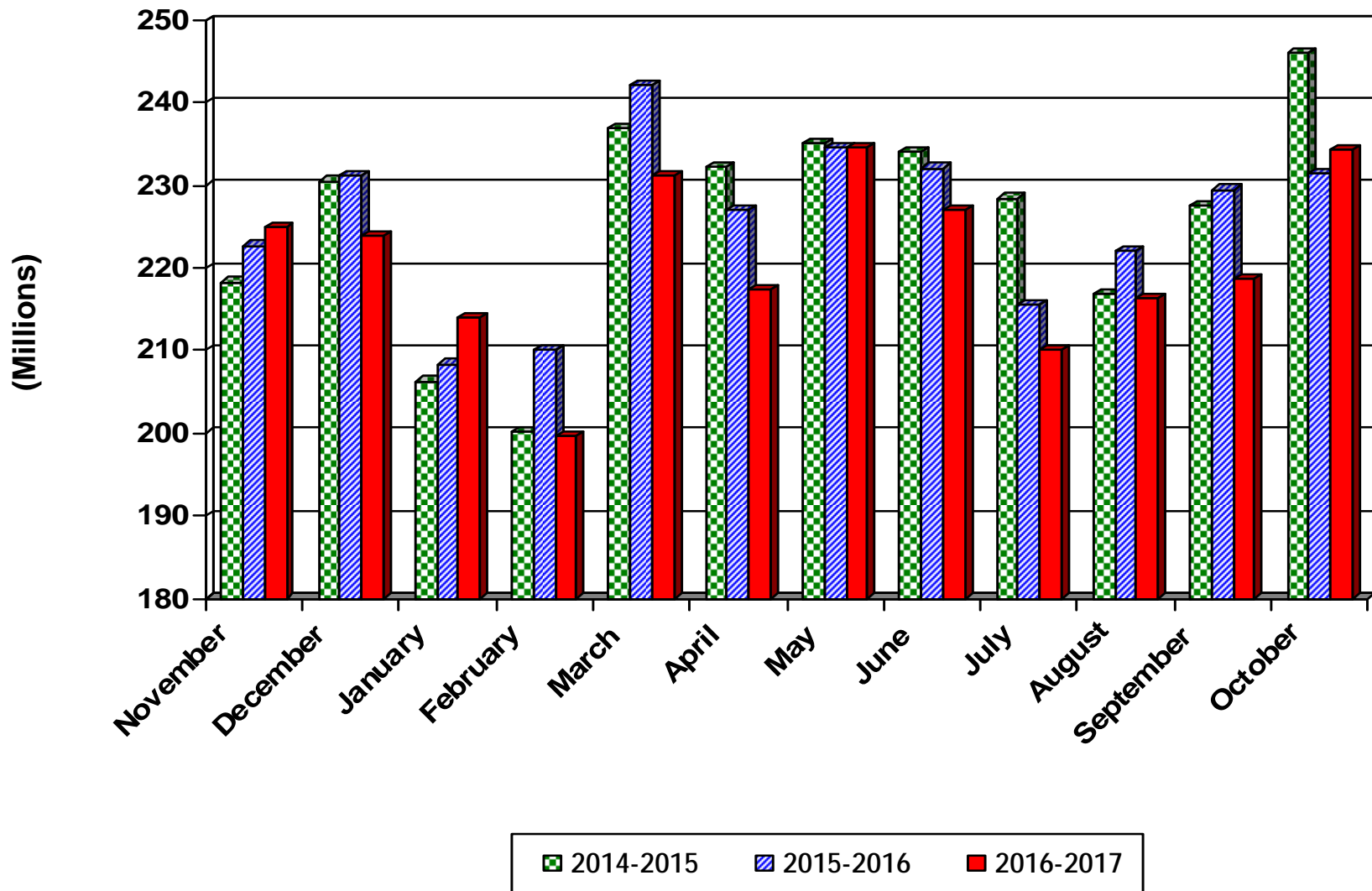
Metropolitan Transportation Authority				October	
Revenue Passengers					
12 Month Averages	2015	2016	Percent Change	2017	Percent Change
MTA New York City Transit	200,791,361	200,015,749	-0.39%	195,659,104	-2.18%
MTA New York City Subway	146,546,273	146,470,125	-0.05%	144,860,274	-1.10%
MTA New York City Bus	54,245,089	53,545,624	-1.29%	50,798,830	-5.13%
MTA Staten Island Railway	370,802	377,858	1.90%	380,529	0.71%
MTA Long Island Rail Road	7,261,220	7,422,649	2.22%	7,460,138	0.51%
MTA Metro-North Railroad	7,131,301	7,205,910	1.05%	7,227,083	0.29%
East of Hudson	6,986,494	7,064,147	1.11%	7,091,979	0.39%
Harlem Line	2,279,891	2,308,507	1.26%	2,323,996	0.67%
Hudson Line	1,363,322	1,379,110	1.16%	1,410,307	2.26%
New Haven Line	3,343,282	3,376,530	0.99%	3,357,677	-0.56%
West of Hudson	144,807	141,762	-2.10%	135,104	-4.70%
Port Jervis Line	86,406	84,354	-2.38%	81,105	-3.85%
Pascack Valley Line	58,401	57,408	-1.70%	53,999	-5.94%
MTA Bus Company	10,428,348	10,495,734	0.65%	10,237,138	-2.46%
MTA Bridges & Tunnels	24,614,344	25,601,725	4.01%	25,710,328	0.42%
Total All Agencies	225,983,031	225,517,900	-0.21%	220,963,992	-2.02%
(Excludes Bridges & Tunnels)					
Weekdays:	21	20		21	
Holidays:	1	1		1	
Weekend Days:	9	10		9	
Days	31	31		31	

Tuesday, December 05, 2017

Metropolitan Transportation Authority				October	
Average Weekday Passengers	2015	2016	Percent Change	2017	Percent Change
<b>MTA New York City Transit</b>	8,180,299	7,833,422	-4.24%	7,836,103	0.03%
MTA New York City Subway	5,975,276	5,759,591	-3.61%	5,807,225	0.83%
MTA New York City Bus	2,205,022	2,073,830	-5.95%	2,028,878	-2.17%
<b>MTA Staten Island Railway</b>	18,135	17,330	-4.44%	18,107	4.48%
<b>MTA Long Island Rail Road</b>	309,872	315,279	1.74%	313,326	-0.62%
<b>MTA Metro-North Railroad</b>	299,864	298,985	-0.29%	300,077	0.37%
<i><b>East of Hudson</b></i>	292,836	293,166	0.11%	293,850	0.23%
Harlem Line	97,017	97,090	0.08%	95,366	-1.78%
Hudson Line	56,955	57,769	1.43%	59,944	3.76%
New Haven Line	138,865	138,307	-0.40%	138,540	0.17%
<i><b>West of Hudson</b></i>	7,028	5,819	-17.20%	6,227	7.01%
Port Jervis Line	4,233	3,638	-14.06%	3,892	6.98%
Pascack Valley Line	2,795	2,181	-21.97%	2,335	7.06%
<b>MTA Bus Company</b>	430,760	418,098	-2.94%	413,855	-1.01%
<b>MTA Bridges &amp; Tunnels</b>	862,734	866,829	0.47%	897,370	3.52%
<b>Total All Agencies</b>	<b>9,238,929</b>	<b>8,883,114</b>	<b>-3.85%</b>	<b>8,881,468</b>	<b>-0.02%</b>
(Excludes Bridges & Tunnels)					
Weekdays:	21	20		21	
Holidays:	1	1		1	
Weekend Days:	9	10		9	
Days	31	31		31	

Tuesday, December 05, 2017

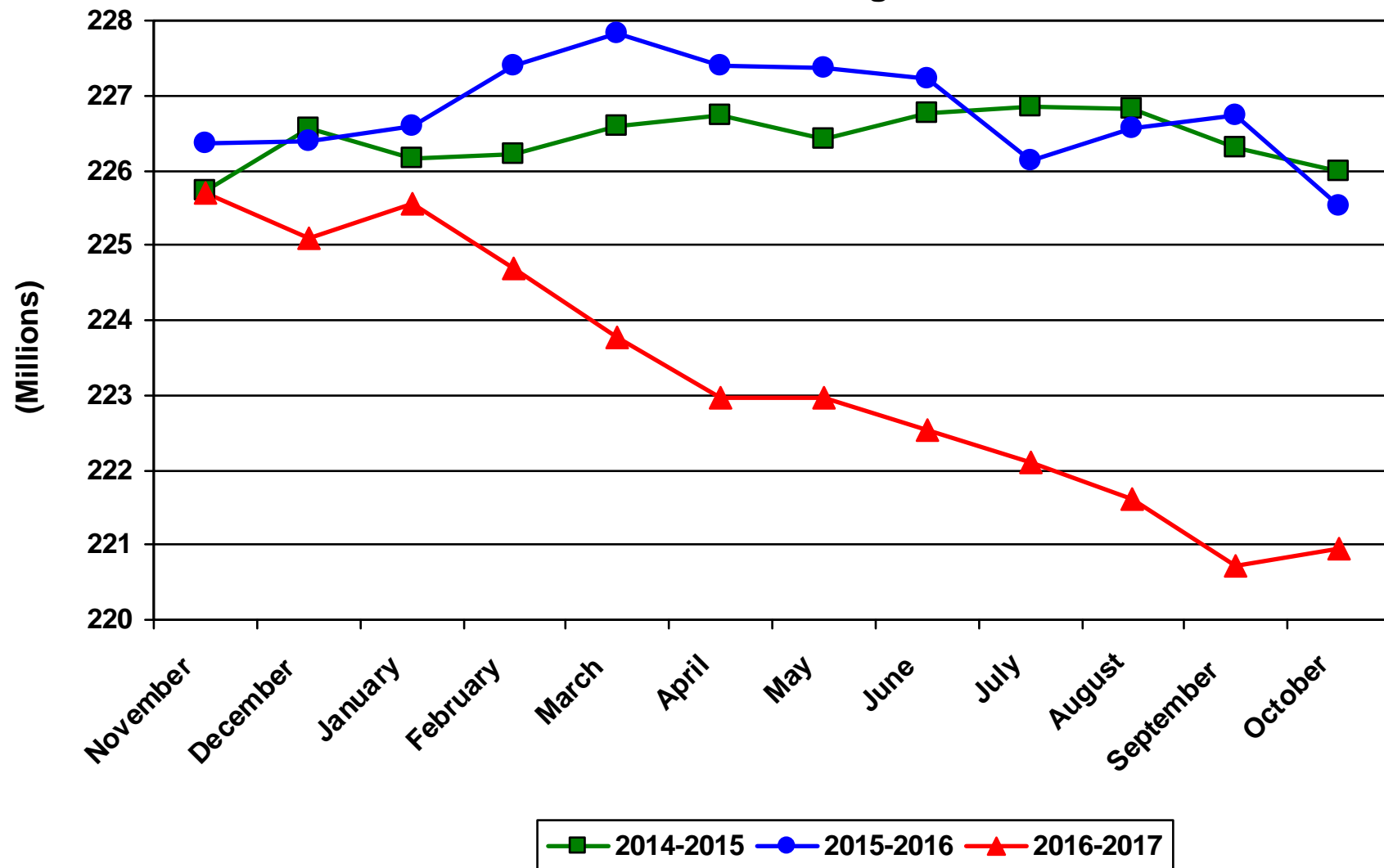
## Metropolitan Transportation Authority Revenue Passengers



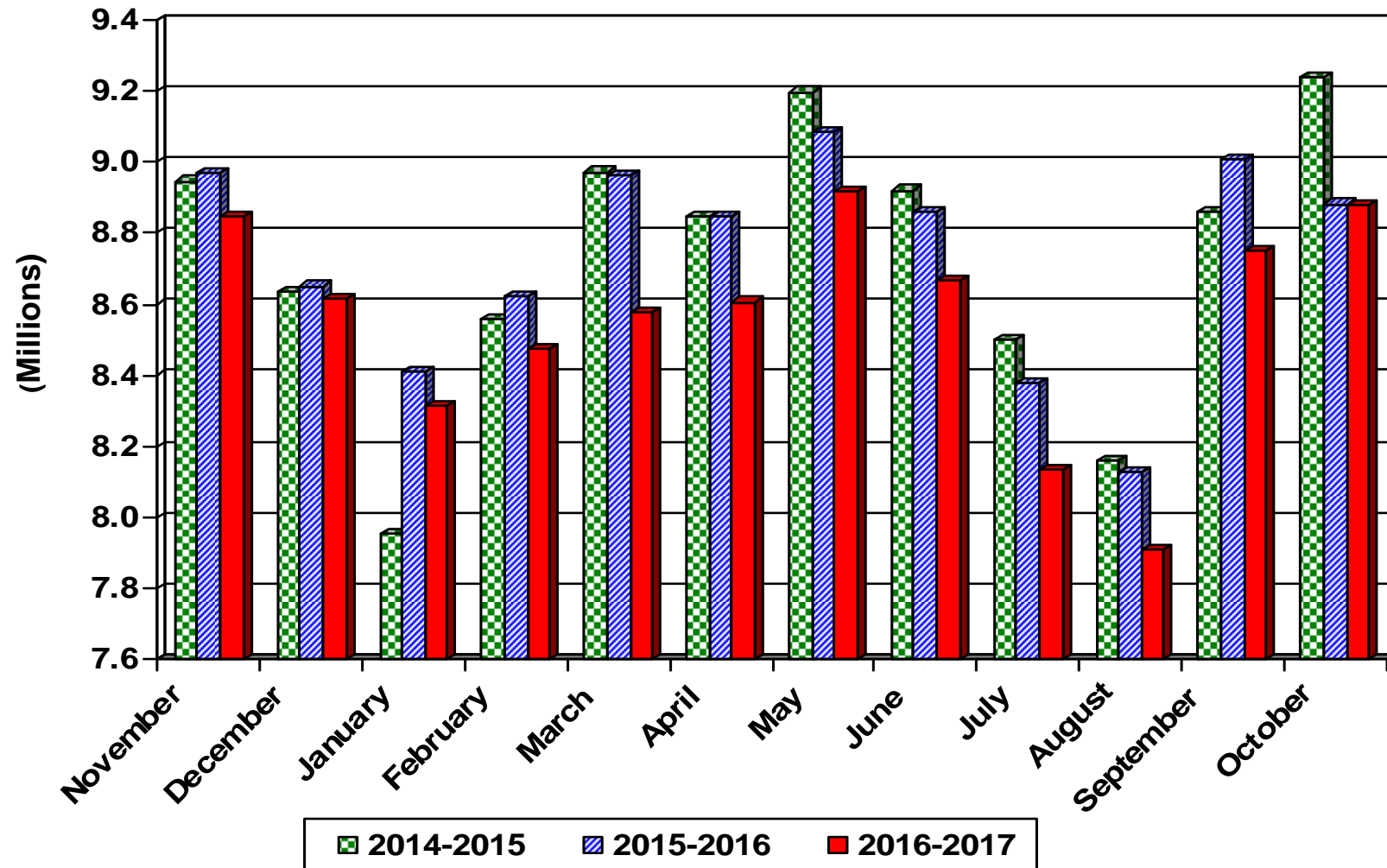


# Metropolitan Transportation Authority Revenue Passengers

## 12 Month Averages



## Metropolitan Transportation Authority Average Weekday Passengers



## Metropolitan Transportation Authority

October

## Metropolitan Transportation Authority

## Revenue Passengers

Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	218,236,110	222,702,079	2.05%	224,847,343	0.96%
December	230,512,649	231,065,220	0.24%	223,926,130	-3.09%
January	206,268,455	208,365,217	1.02%	213,864,321	2.64%
February	200,136,659	210,062,462	4.96%	199,588,921	-4.99%
March	236,828,923	242,057,167	2.21%	231,082,743	-4.53%
April	232,095,483	226,900,984	-2.24%	217,326,458	-4.22%
May	235,019,006	234,618,531	-0.17%	234,464,126	-0.07%
June	233,980,472	232,054,396	-0.82%	227,061,370	-2.15%
July	228,409,086	215,495,486	-5.65%	210,140,419	-2.49%
August	216,756,306	221,983,217	2.41%	216,298,848	-2.56%
September	227,525,786	229,481,785	0.86%	218,601,927	-4.74%
<b>October</b>	<b>246,027,442</b>	<b>231,428,251</b>	<b>-5.93%</b>	<b>234,365,299</b>	<b>1.27%</b>
12 Month Ave	225,983,031	225,517,900	-0.21%	220,963,992	-2.02%
Year-to-Date	2,263,047,618	2,252,447,497	-0.47%	2,202,794,430	-2.20%

## 12 Month Averages

Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	225,712,677	226,355,195	0.28%	225,696,672	-0.29%
December	226,567,918	226,401,243	-0.07%	225,101,748	-0.57%
January	226,168,044	226,575,973	0.18%	225,560,006	-0.45%
February	226,225,170	227,403,123	0.52%	224,687,211	-1.19%
March	226,575,948	227,838,811	0.56%	223,772,676	-1.78%
April	226,739,929	227,405,936	0.29%	222,974,799	-1.95%
May	226,420,927	227,372,563	0.42%	222,961,931	-1.94%
June	226,754,987	227,212,056	0.20%	222,545,846	-2.05%
July	226,842,495	226,135,923	-0.31%	222,099,590	-1.78%
August	226,816,764	226,571,499	-0.11%	221,625,893	-2.18%
September	226,293,173	226,734,499	0.20%	220,719,238	-2.65%
<b>October</b>	<b>225,983,031</b>	<b>225,517,900</b>	<b>-0.21%</b>	<b>220,963,992</b>	<b>-2.02%</b>

## Average Weekday Passengers

Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	8,947,640	8,970,657	0.26%	8,848,948	-1.36%
December	8,635,225	8,651,329	0.19%	8,614,513	-0.43%
January	7,953,770	8,408,241	5.71%	8,315,657	-1.10%
February	8,556,045	8,621,692	0.77%	8,474,102	-1.71%
March	8,972,642	8,961,385	-0.13%	8,578,556	-4.27%
April	8,848,760	8,845,525	-0.04%	8,606,574	-2.70%
May	9,198,768	9,083,871	-1.25%	8,917,852	-1.83%
June	8,920,884	8,858,944	-0.69%	8,666,227	-2.18%
July	8,502,405	8,377,158	-1.47%	8,134,149	-2.90%
August	8,161,363	8,128,520	-0.40%	7,908,073	-2.71%
September	8,859,276	9,007,037	1.67%	8,750,722	-2.85%
<b>October</b>	<b>9,238,929</b>	<b>8,883,114</b>	<b>-3.85%</b>	<b>8,881,468</b>	<b>-0.02%</b>

## MTA New York City Transit

Revenue Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	194,418,829	197,975,727	1.83%	199,416,515	0.73%
December	204,555,139	204,749,107	0.09%	198,347,249	-3.13%
January	183,767,097	185,585,948	0.99%	189,946,869	2.35%
February	178,598,334	187,018,360	4.71%	177,193,798	-5.25%
March	210,843,049	214,962,054	1.95%	204,878,541	-4.69%
April	206,370,025	201,573,103	-2.32%	192,930,582	-4.29%
May	209,230,157	208,519,995	-0.34%	207,994,572	-0.25%
June	207,528,922	205,225,083	-1.11%	200,591,083	-2.26%
July	202,067,215	190,299,489	-5.82%	185,271,335	-2.64%
August	191,546,098	195,759,687	2.20%	190,438,818	-2.72%
September	201,668,047	203,321,259	0.82%	193,418,747	-4.87%
<b>October</b>	<b>218,903,424</b>	<b>205,199,171</b>	<b>-6.26%</b>	<b>207,481,139</b>	<b>1.11%</b>
12 Month Ave	200,791,361	200,015,749	-0.39%	195,659,104	-2.18%
Year-to-Date	2,010,522,368	1,997,464,149	-0.65%	1,950,145,484	-2.37%
12 Month Averages					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	200,789,793	201,087,770	0.15%	200,135,814	-0.47%
December	201,528,233	201,103,934	-0.21%	199,602,326	-0.75%
January	201,160,323	201,255,504	0.05%	199,965,736	-0.64%
February	201,205,432	201,957,173	0.37%	199,147,023	-1.39%
March	201,472,809	202,300,424	0.41%	198,306,730	-1.97%
April	201,599,530	201,900,680	0.15%	197,586,520	-2.14%
May	201,298,045	201,841,500	0.27%	197,542,735	-2.13%
June	201,579,010	201,649,514	0.03%	197,156,568	-2.23%
July	201,629,999	200,668,870	-0.48%	196,737,555	-1.96%
August	201,573,850	201,020,002	-0.27%	196,294,149	-2.35%
September	201,065,368	201,157,770	0.05%	195,468,940	-2.83%
<b>October</b>	<b>200,791,361</b>	<b>200,015,749</b>	<b>-0.39%</b>	<b>195,659,104</b>	<b>-2.18%</b>
Average Weekday Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	7,892,538	7,914,613	0.28%	7,793,452	-1.53%
December	7,623,337	7,630,448	0.09%	7,590,923	-0.52%
January	7,023,925	7,427,622	5.75%	7,327,845	-1.34%
February	7,594,202	7,637,655	0.57%	7,482,722	-2.03%
March	7,952,993	7,928,251	-0.31%	7,577,527	-4.42%
April	7,836,222	7,819,074	-0.22%	7,595,621	-2.86%
May	8,139,590	8,035,683	-1.28%	7,884,233	-1.88%
June	7,883,012	7,806,867	-0.97%	7,630,605	-2.26%
July	7,490,656	7,354,909	-1.81%	7,129,419	-3.07%
August	7,177,366	7,146,334	-0.43%	6,941,224	-2.87%
September	7,814,868	7,945,242	1.67%	7,701,788	-3.06%
<b>October</b>	<b>8,180,299</b>	<b>7,833,422</b>	<b>-4.24%</b>	<b>7,836,103</b>	<b>0.03%</b>

## MTA New York City Subway

Revenue Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	141,226,971	144,542,523	2.35%	147,033,943	1.72%
December	150,132,948	150,827,541	0.46%	147,509,424	-2.20%
January	133,814,801	136,413,951	1.94%	140,288,294	2.84%
February	130,776,608	136,690,795	4.52%	130,465,060	-4.55%
March	153,093,778	156,297,328	2.09%	151,384,924	-3.14%
April	150,372,555	147,291,655	-2.05%	143,284,553	-2.72%
May	151,579,782	151,910,204	0.22%	153,470,353	1.03%
June	152,192,133	151,007,041	-0.78%	149,360,780	-1.09%
July	148,437,225	139,851,426	-5.78%	137,447,659	-1.72%
August	140,064,643	143,703,034	2.60%	141,721,056	-1.38%
September	146,876,344	148,467,391	1.08%	143,012,669	-3.67%
<b>October</b>	<b>159,987,486</b>	<b>150,638,608</b>	<b>-5.84%</b>	<b>153,344,574</b>	<b>1.80%</b>
12 Month Ave	146,546,273	146,470,125	-0.05%	144,860,274	-1.10%
Year-to-Date	1,467,195,355	1,462,271,433	-0.34%	1,443,779,922	-1.26%
12 Month Averages					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	145,310,113	146,822,569	1.04%	146,677,743	-0.10%
December	145,940,635	146,880,452	0.64%	146,401,233	-0.33%
January	145,662,922	147,097,047	0.98%	146,724,095	-0.25%
February	145,744,103	147,589,896	1.27%	146,205,284	-0.94%
March	146,135,681	147,856,859	1.18%	145,795,917	-1.39%
April	146,341,118	147,600,117	0.86%	145,461,992	-1.45%
May	146,233,750	147,627,652	0.95%	145,592,004	-1.38%
June	146,588,167	147,528,895	0.64%	145,454,816	-1.41%
July	146,749,115	146,813,411	0.04%	145,254,502	-1.06%
August	146,765,471	147,116,611	0.24%	145,089,337	-1.38%
September	146,557,380	147,249,198	0.47%	144,634,777	-1.78%
<b>October</b>	<b>146,546,273</b>	<b>146,470,125</b>	<b>-0.05%</b>	<b>144,860,274</b>	<b>-1.10%</b>
Average Weekday Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	5,734,440	5,781,526	0.82%	5,746,772	-0.60%
December	5,584,168	5,616,142	0.57%	5,642,250	0.46%
January	5,112,634	5,450,158	6.60%	5,410,721	-0.72%
February	5,568,552	5,597,172	0.51%	5,529,330	-1.21%
March	5,779,365	5,771,631	-0.13%	5,609,555	-2.81%
April	5,723,687	5,728,003	0.08%	5,662,289	-1.15%
May	5,909,329	5,868,961	-0.68%	5,836,342	-0.56%
June	5,790,176	5,763,243	-0.47%	5,698,402	-1.13%
July	5,537,445	5,445,341	-1.66%	5,330,092	-2.12%
August	5,291,858	5,276,450	-0.29%	5,197,367	-1.50%
September	5,707,385	5,816,860	1.92%	5,713,700	-1.77%
<b>October</b>	<b>5,975,276</b>	<b>5,759,591</b>	<b>-3.61%</b>	<b>5,807,225</b>	<b>0.83%</b>

## MTA New York City Bus

## Revenue Passengers

Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	53,191,858	53,433,204	0.45%	52,382,572	-1.97%
December	54,422,191	53,921,566	-0.92%	50,837,825	-5.72%
January	49,952,296	49,171,997	-1.56%	49,658,575	0.99%
February	47,821,726	50,327,565	5.24%	46,728,738	-7.15%
March	57,749,271	58,664,726	1.59%	53,493,617	-8.81%
April	55,997,469	54,281,448	-3.06%	49,646,029	-8.54%
May	57,650,375	56,609,791	-1.80%	54,524,219	-3.68%
June	55,336,789	54,218,042	-2.02%	51,230,303	-5.51%
July	53,629,990	50,448,063	-5.93%	47,823,676	-5.20%
August	51,481,455	52,056,653	1.12%	48,717,762	-6.41%
September	54,791,703	54,853,868	0.11%	50,406,078	-8.11%
<b>October</b>	<b>58,915,938</b>	<b>54,560,563</b>	<b>-7.39%</b>	<b>54,136,565</b>	<b>-0.78%</b>
<b>12 Month Ave</b>	<b>54,245,089</b>	<b>53,545,624</b>	<b>-1.29%</b>	<b>50,798,830</b>	<b>-5.13%</b>
<b>Year-to-Date</b>	<b>543,327,013</b>	<b>535,192,716</b>	<b>-1.50%</b>	<b>506,365,562</b>	<b>-5.39%</b>

## 12 Month Averages

Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	55,479,680	54,265,201	-2.19%	53,458,071	-1.49%
December	55,587,597	54,223,482	-2.45%	53,201,093	-1.89%
January	55,497,402	54,158,457	-2.41%	53,241,641	-1.69%
February	55,461,329	54,367,277	-1.97%	52,941,739	-2.62%
March	55,337,128	54,443,565	-1.61%	52,510,813	-3.55%
April	55,258,412	54,300,563	-1.73%	52,124,528	-4.01%
May	55,064,295	54,213,848	-1.54%	51,950,730	-4.17%
June	54,990,843	54,120,619	-1.58%	51,701,752	-4.47%
July	54,880,884	53,855,458	-1.87%	51,483,053	-4.41%
August	54,808,379	53,903,392	-1.65%	51,204,812	-5.01%
September	54,507,988	53,908,572	-1.10%	50,834,163	-5.70%
<b>October</b>	<b>54,245,089</b>	<b>53,545,624</b>	<b>-1.29%</b>	<b>50,798,830</b>	<b>-5.13%</b>

## Average Weekday Passengers

Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	2,158,097	2,133,088	-1.16%	2,046,680	-4.05%
December	2,039,169	2,014,306	-1.22%	1,948,673	-3.26%
January	1,911,291	1,977,463	3.46%	1,917,124	-3.05%
February	2,025,650	2,040,483	0.73%	1,953,392	-4.27%
March	2,173,629	2,156,619	-0.78%	1,967,972	-8.75%
April	2,112,535	2,091,071	-1.02%	1,933,332	-7.54%
May	2,230,261	2,166,722	-2.85%	2,047,891	-5.48%
June	2,092,836	2,043,624	-2.35%	1,932,203	-5.45%
July	1,953,211	1,909,568	-2.23%	1,799,327	-5.77%
August	1,885,508	1,869,883	-0.83%	1,743,857	-6.74%
September	2,107,483	2,128,381	0.99%	1,988,088	-6.59%
<b>October</b>	<b>2,205,022</b>	<b>2,073,830</b>	<b>-5.95%</b>	<b>2,028,878</b>	<b>-2.17%</b>

## MTA Bus Company

## Revenue Passengers

Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	10,098,386	10,324,241	2.24%	10,414,750	0.88%
December	10,491,414	10,524,956	0.32%	10,102,793	-4.01%
January	9,498,182	9,464,783	-0.35%	9,840,105	3.97%
February	9,112,713	9,650,946	5.91%	9,289,270	-3.75%
March	11,036,594	11,393,621	3.23%	10,774,447	-5.43%
April	10,752,047	10,566,032	-1.73%	9,868,714	-6.60%
May	10,954,849	11,022,447	0.62%	10,948,782	-0.67%
June	10,660,010	10,778,433	1.11%	10,415,892	-3.36%
July	10,461,178	10,002,577	-4.38%	9,835,319	-1.67%
August	10,113,391	10,491,025	3.73%	10,182,683	-2.94%
September	10,627,657	10,898,004	2.54%	10,293,093	-5.55%
<b>October</b>	<b>11,333,752</b>	<b>10,831,747</b>	<b>-4.43%</b>	<b>10,879,804</b>	<b>0.44%</b>
<b>12 Month Ave</b>	<b>10,428,348</b>	<b>10,495,734</b>	<b>0.65%</b>	<b>10,237,138</b>	<b>-2.46%</b>
<b>Year-to-Date</b>	<b>104,550,373</b>	<b>105,099,614</b>	<b>0.53%</b>	<b>102,328,109</b>	<b>-2.64%</b>

## 12 Month Averages

Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	10,419,371	10,447,169	0.27%	10,503,277	0.54%
December	10,465,103	10,449,964	-0.14%	10,468,096	0.17%
January	10,470,282	10,447,181	-0.22%	10,499,373	0.50%
February	10,479,066	10,492,034	0.12%	10,469,234	-0.22%
March	10,498,415	10,521,786	0.22%	10,417,636	-0.99%
April	10,513,672	10,506,285	-0.07%	10,359,526	-1.40%
May	10,493,838	10,511,918	0.17%	10,353,387	-1.51%
June	10,501,593	10,521,786	0.19%	10,323,175	-1.89%
July	10,505,493	10,483,570	-0.21%	10,309,237	-1.66%
August	10,510,306	10,515,039	0.05%	10,283,542	-2.20%
September	10,468,073	10,537,568	0.66%	10,233,133	-2.89%
<b>October</b>	<b>10,428,348</b>	<b>10,495,734</b>	<b>0.65%</b>	<b>10,237,138</b>	<b>-2.46%</b>

## Average Weekday Passengers

Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	420,197	418,413	-0.42%	412,102	-1.51%
December	399,293	398,969	-0.08%	393,484	-1.37%
January	370,707	387,423	4.51%	386,330	-0.28%
February	393,191	398,129	1.26%	394,036	-1.03%
March	423,737	425,372	0.39%	402,782	-5.31%
April	413,022	413,769	0.18%	392,293	-5.19%
May	433,656	428,947	-1.09%	417,065	-2.77%
June	408,956	411,220	0.55%	396,805	-3.51%
July	387,040	385,550	-0.39%	377,376	-2.12%
August	376,831	381,719	1.30%	369,341	-3.24%
September	415,874	428,697	3.08%	412,007	-3.89%
<b>October</b>	<b>430,760</b>	<b>418,098</b>	<b>-2.94%</b>	<b>413,855</b>	<b>-1.01%</b>

## Metropolitan Transportation Authority

October

## MTA Staten Island Railway

Revenue Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	351,734	376,346	7.00%	395,065	4.97%
December	369,585	397,292	7.50%	376,371	-5.27%
January	336,800	363,383	7.89%	379,316	4.38%
February	311,519	335,796	7.79%	328,169	-2.27%
March	393,272	412,851	4.98%	398,044	-3.59%
April	376,535	371,087	-1.45%	353,305	-4.79%
May	390,089	394,816	1.21%	414,213	4.91%
June	406,750	402,135	-1.13%	403,043	0.23%
July	359,630	327,407	-8.96%	333,045	1.72%
August	331,564	348,194	5.02%	353,571	1.54%
September	386,275	404,713	4.77%	393,824	-2.69%
<b>October</b>	<b>435,865</b>	<b>400,281</b>	<b>-8.16%</b>	<b>438,383</b>	<b>9.52%</b>
12 Month Ave	370,802	377,858	1.90%	380,529	0.71%
Year-to-Date	3,728,299	3,760,663	0.87%	3,794,913	0.91%
12 Month Averages					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	362,108	372,853	2.97%	379,418	1.76%
December	363,968	375,161	3.08%	377,675	0.67%
January	362,266	377,377	4.17%	379,003	0.43%
February	361,963	379,400	4.82%	378,367	-0.27%
March	363,621	381,031	4.79%	377,133	-1.02%
April	364,950	380,577	4.28%	375,651	-1.29%
May	365,292	380,971	4.29%	377,268	-0.97%
June	367,658	380,587	3.52%	377,343	-0.85%
July	369,053	377,901	2.40%	377,813	-0.02%
August	370,746	379,287	2.30%	378,261	-0.27%
September	370,330	380,824	2.83%	377,354	-0.91%
<b>October</b>	<b>370,802</b>	<b>377,858</b>	<b>1.90%</b>	<b>380,529</b>	<b>0.71%</b>
Average Weekday Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	16,296	17,361	6.54%	17,059	-1.74%
December	15,248	16,372	7.37%	16,270	-0.62%
January	14,543	16,441	13.06%	16,566	0.76%
February	14,883	15,738	5.75%	15,676	-0.39%
March	16,442	16,674	1.41%	16,130	-3.26%
April	15,604	16,039	2.79%	15,739	-1.87%
May	17,077	16,949	-0.75%	17,185	1.39%
June	16,876	16,613	-1.56%	16,675	0.38%
July	14,458	13,990	-3.24%	14,161	1.22%
August	13,653	13,672	0.14%	13,787	0.84%
September	16,818	17,389	3.40%	17,365	-0.14%
<b>October</b>	<b>18,135</b>	<b>17,330</b>	<b>-4.44%</b>	<b>18,107</b>	<b>4.48%</b>



## Metropolitan Transportation Authority

October

## MTA Long Island Rail Road

Revenue Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	6,681,433	7,027,591	5.18%	7,385,548	5.09%
December	7,594,356	7,761,607	2.20%	7,683,544	-1.01%
January	6,362,309	6,483,006	1.90%	6,958,391	7.33%
February	6,142,068	6,614,306	7.69%	6,522,399	-1.39%
March	7,384,700	7,757,041	5.04%	7,723,528	-0.43%
April	7,313,844	7,271,823	-0.57%	7,158,667	-1.56%
May	7,262,655	7,483,655	3.04%	7,642,164	2.12%
June	7,777,803	7,969,169	2.46%	7,943,275	-0.32%
July	7,873,688	7,621,000	-3.21%	7,455,744	-2.17%
August	7,563,444	7,940,051	4.98%	7,816,201	-1.56%
September	7,491,598	7,589,091	1.30%	7,413,822	-2.31%
<b>October</b>	<b>7,686,741</b>	<b>7,553,444</b>	<b>-1.73%</b>	<b>7,818,376</b>	<b>3.51%</b>
<b>12 Month Ave</b>	<b>7,261,220</b>	<b>7,422,649</b>	<b>2.22%</b>	<b>7,460,138</b>	<b>0.51%</b>
<b>Year-to-Date</b>	<b>72,858,849</b>	<b>74,282,585</b>	<b>1.95%</b>	<b>74,452,565</b>	<b>0.23%</b>

12 Month Averages					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	7,123,085	7,290,066	2.34%	7,452,478	2.23%
December	7,155,687	7,304,004	2.07%	7,445,973	1.94%
January	7,138,761	7,314,062	2.46%	7,485,588	2.35%
February	7,141,626	7,353,415	2.97%	7,477,930	1.69%
March	7,175,093	7,384,444	2.92%	7,475,137	1.23%
April	7,185,432	7,380,942	2.72%	7,465,707	1.15%
May	7,186,442	7,399,358	2.96%	7,478,916	1.08%
June	7,208,841	7,415,306	2.86%	7,476,758	0.83%
July	7,229,473	7,394,248	2.28%	7,462,987	0.93%
August	7,243,145	7,425,632	2.52%	7,452,666	0.36%
September	7,259,324	7,433,757	2.40%	7,438,060	0.06%
<b>October</b>	<b>7,261,220</b>	<b>7,422,649</b>	<b>2.22%</b>	<b>7,460,138</b>	<b>0.51%</b>

Average Weekday Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	318,659	319,904	0.39%	323,360	1.08%
December	301,964	309,372	2.45%	318,908	3.08%
January	283,228	298,683	5.46%	304,399	1.91%
February	285,444	292,604	2.51%	301,738	3.12%
March	297,011	301,360	1.46%	300,813	-0.18%
April	294,548	305,742	3.80%	310,565	1.58%
May	314,372	311,313	-0.97%	307,067	-1.36%
June	310,718	319,475	2.82%	317,303	-0.68%
July	312,440	326,075	4.36%	318,758	-2.24%
August	308,139	303,263	-1.58%	299,106	-1.37%
September	313,050	318,591	1.77%	322,174	1.12%
<b>October</b>	<b>309,872</b>	<b>315,279</b>	<b>1.74%</b>	<b>313,326</b>	<b>-0.62%</b>

## MTA Metro-North Railroad

Revenue Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	6,685,728	6,998,173	4.67%	7,235,466	3.39%
December	7,502,155	7,632,258	1.73%	7,416,173	-2.83%
January	6,304,068	6,468,097	2.60%	6,739,640	4.20%
February	5,972,025	6,443,054	7.89%	6,255,285	-2.91%
March	7,171,308	7,531,600	5.02%	7,308,183	-2.97%
April	7,283,033	7,118,939	-2.25%	7,015,190	-1.46%
May	7,181,256	7,197,619	0.23%	7,464,395	3.71%
June	7,606,986	7,679,577	0.95%	7,708,077	0.37%
July	7,647,375	7,245,013	-5.26%	7,244,976	0.00%
August	7,201,809	7,444,260	3.37%	7,507,575	0.85%
September	7,352,209	7,268,718	-1.14%	7,082,441	-2.56%
<b>October</b>	<b>7,667,660</b>	<b>7,443,609</b>	<b>-2.92%</b>	<b>7,747,597</b>	<b>4.08%</b>
12 Month Ave	7,131,301	7,205,910	1.05%	7,227,083	0.29%
Year-to-Date	71,387,729	71,840,486	0.63%	72,073,359	0.32%
12 Month Averages					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	7,018,320	7,157,338	1.98%	7,225,684	0.95%
December	7,054,927	7,168,180	1.61%	7,207,677	0.55%
January	7,036,412	7,181,849	2.07%	7,230,306	0.67%
February	7,037,082	7,221,102	2.61%	7,214,658	-0.09%
March	7,066,010	7,251,126	2.62%	7,196,040	-0.76%
April	7,076,345	7,237,451	2.28%	7,187,394	-0.69%
May	7,077,310	7,238,815	2.28%	7,209,626	-0.40%
June	7,097,884	7,244,864	2.07%	7,212,001	-0.45%
July	7,108,477	7,211,334	1.45%	7,211,998	0.01%
August	7,118,717	7,231,538	1.58%	7,217,274	-0.20%
September	7,130,079	7,224,581	1.33%	7,201,751	-0.32%
<b>October</b>	<b>7,131,301</b>	<b>7,205,910</b>	<b>1.05%</b>	<b>7,227,083</b>	<b>0.29%</b>
Average Weekday Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	299,951	300,366	0.14%	302,975	0.87%
December	295,383	296,167	0.27%	294,928	-0.42%
January	261,367	278,072	6.39%	280,517	0.88%
February	268,325	277,567	3.44%	279,930	0.85%
March	282,459	289,729	2.57%	281,304	-2.91%
April	289,364	290,902	0.53%	292,356	0.50%
May	294,073	290,979	-1.05%	292,302	0.45%
June	301,323	304,770	1.14%	304,839	0.02%
July	297,811	296,634	-0.40%	294,435	-0.74%
August	285,374	283,532	-0.65%	284,615	0.38%
September	298,666	297,118	-0.52%	297,388	0.09%
<b>October</b>	<b>299,864</b>	<b>298,985</b>	<b>-0.29%</b>	<b>300,077</b>	<b>0.37%</b>

## East of Hudson

## Revenue Passengers

Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	6,555,045	6,859,735	4.65%	7,104,082	3.56%
December	7,356,438	7,486,228	1.76%	7,280,396	-2.75%
January	6,173,389	6,340,920	2.71%	6,610,352	4.25%
February	5,849,842	6,313,644	7.93%	6,134,790	-2.83%
March	7,018,867	7,378,875	5.13%	7,162,514	-2.93%
April	7,134,749	6,980,262	-2.17%	6,885,596	-1.36%
May	7,038,334	7,052,626	0.20%	7,323,535	3.84%
June	7,450,980	7,526,378	1.01%	7,563,718	0.50%
July	7,490,170	7,097,402	-5.24%	7,111,253	0.20%
August	7,054,321	7,288,957	3.33%	7,363,555	1.02%
September	7,202,664	7,123,553	-1.10%	6,953,276	-2.39%
<b>October</b>	<b>7,513,131</b>	<b>7,321,189</b>	<b>-2.55%</b>	<b>7,610,678</b>	<b>3.95%</b>
<b>12 Month Ave</b>	<b>6,986,494</b>	<b>7,064,147</b>	<b>1.11%</b>	<b>7,091,979</b>	<b>0.39%</b>
<b>Year-to-Date</b>	<b>69,926,447</b>	<b>70,423,806</b>	<b>0.71%</b>	<b>70,719,267</b>	<b>0.42%</b>

## 12 Month Averages

Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	6,878,852	7,011,885	1.93%	7,084,510	1.04%
December	6,914,593	7,022,701	1.56%	7,067,357	0.64%
January	6,895,858	7,036,662	2.04%	7,089,810	0.76%
February	6,896,125	7,075,312	2.60%	7,074,905	-0.01%
March	6,924,016	7,105,313	2.62%	7,056,875	-0.68%
April	6,933,686	7,092,439	2.29%	7,048,986	-0.61%
May	6,934,510	7,093,630	2.29%	7,071,562	-0.31%
June	6,954,285	7,099,913	2.09%	7,074,674	-0.36%
July	6,964,597	7,067,182	1.47%	7,075,828	0.12%
August	6,974,490	7,086,735	1.61%	7,082,044	-0.07%
September	6,985,370	7,080,143	1.36%	7,067,855	-0.17%
<b>October</b>	<b>6,986,494</b>	<b>7,064,147</b>	<b>1.11%</b>	<b>7,091,979</b>	<b>0.39%</b>

## Average Weekday Passengers

Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	292,710	293,087	0.13%	296,403	1.13%
December	288,744	289,518	0.27%	288,459	-0.37%
January	254,821	271,386	6.50%	274,050	0.98%
February	261,911	271,103	3.51%	273,604	0.92%
March	275,526	283,078	2.74%	274,960	-2.87%
April	282,620	284,305	0.60%	285,895	0.56%
May	286,935	284,071	-1.00%	285,888	0.64%
June	294,228	297,803	1.22%	298,274	0.16%
July	290,649	289,263	-0.48%	287,757	-0.52%
August	278,362	276,763	-0.57%	278,338	0.57%
September	291,542	290,202	-0.46%	290,937	0.25%
<b>October</b>	<b>292,836</b>	<b>293,166</b>	<b>0.11%</b>	<b>293,850</b>	<b>0.23%</b>

## Metropolitan Transportation Authority

October

## Harlem Line

Revenue Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	2,138,624	2,239,569	4.72%	2,322,328	3.70%
December	2,398,294	2,442,546	1.85%	2,378,417	-2.63%
January	2,040,760	2,098,696	2.84%	2,189,026	4.30%
February	1,931,569	2,097,939	8.61%	2,036,882	-2.91%
March	2,335,202	2,435,142	4.28%	2,398,995	-1.48%
April	2,330,964	2,295,023	-1.54%	2,252,524	-1.85%
May	2,288,972	2,290,681	0.07%	2,406,553	5.06%
June	2,416,982	2,439,435	0.93%	2,470,479	1.27%
July	2,406,276	2,277,356	-5.36%	2,288,211	0.48%
August	2,252,057	2,348,207	4.27%	2,373,087	1.06%
September	2,346,955	2,333,897	-0.56%	2,277,688	-2.41%
<b>October</b>	<b>2,472,035</b>	<b>2,403,597</b>	<b>-2.77%</b>	<b>2,493,758</b>	<b>3.75%</b>
<b>12 Month Ave</b>	<b>2,279,891</b>	<b>2,308,507</b>	<b>1.26%</b>	<b>2,323,996</b>	<b>0.67%</b>
<b>Year-to-Date</b>	<b>22,821,772</b>	<b>23,019,973</b>	<b>0.87%</b>	<b>23,187,203</b>	<b>0.73%</b>

12 Month Averages					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	2,252,719	2,288,303	1.58%	2,315,404	1.18%
December	2,260,621	2,291,991	1.39%	2,310,060	0.79%
January	2,252,664	2,296,819	1.96%	2,317,587	0.90%
February	2,250,445	2,310,683	2.68%	2,312,499	0.08%
March	2,259,602	2,319,011	2.63%	2,309,487	-0.41%
April	2,261,853	2,316,016	2.39%	2,305,945	-0.43%
May	2,261,340	2,316,158	2.42%	2,315,601	-0.02%
June	2,267,976	2,318,030	2.21%	2,318,188	0.01%
July	2,271,546	2,307,286	1.57%	2,319,093	0.51%
August	2,275,324	2,315,299	1.76%	2,321,166	0.25%
September	2,279,370	2,314,211	1.53%	2,316,482	0.10%
<b>October</b>	<b>2,279,891</b>	<b>2,308,507</b>	<b>1.26%</b>	<b>2,323,996</b>	<b>0.67%</b>

Average Weekday Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	96,470	96,730	0.27%	97,810	1.12%
December	94,891	95,346	0.48%	95,209	-0.14%
January	84,941	90,677	6.75%	91,492	0.90%
February	87,218	90,756	4.06%	91,541	0.87%
March	92,289	94,005	1.86%	92,571	-1.52%
April	93,050	94,305	1.35%	94,501	0.21%
May	94,368	93,217	-1.22%	94,721	1.61%
June	96,266	97,395	1.17%	98,262	0.89%
July	94,386	94,149	-0.25%	93,957	-0.20%
August	89,923	89,966	0.05%	90,521	0.62%
September	95,719	95,844	0.13%	97,945	2.19%
<b>October</b>	<b>97,017</b>	<b>97,090</b>	<b>0.08%</b>	<b>95,366</b>	<b>-1.78%</b>

## Metropolitan Transportation Authority

October

## Hudson Line

Revenue Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	1,271,965	1,317,990	3.62%	1,394,632	5.82%
December	1,419,350	1,438,103	1.32%	1,415,909	-1.54%
January	1,185,529	1,216,365	2.60%	1,286,721	5.78%
February	1,135,396	1,219,067	7.37%	1,206,479	-1.03%
March	1,370,062	1,433,576	4.64%	1,396,026	-2.62%
April	1,397,902	1,363,513	-2.46%	1,372,524	0.66%
May	1,381,366	1,397,282	1.15%	1,459,859	4.48%
June	1,448,469	1,460,876	0.86%	1,500,113	2.69%
July	1,464,154	1,402,439	-4.22%	1,441,958	2.82%
August	1,397,488	1,442,263	3.20%	1,491,491	3.41%
September	1,420,180	1,404,276	-1.12%	1,405,569	0.09%
<b>October</b>	<b>1,468,000</b>	<b>1,453,574</b>	<b>-0.98%</b>	<b>1,552,398</b>	<b>6.80%</b>
<b>12 Month Ave</b>	<b>1,363,322</b>	<b>1,379,110</b>	<b>1.16%</b>	<b>1,410,307</b>	<b>2.26%</b>
<b>Year-to-Date</b>	<b>13,668,546</b>	<b>13,793,231</b>	<b>0.91%</b>	<b>14,113,138</b>	<b>2.32%</b>

12 Month Averages					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	1,339,396	1,367,157	2.07%	1,385,497	1.34%
December	1,353,046	1,368,720	1.16%	1,383,648	1.09%
January	1,349,340	1,371,290	1.63%	1,389,511	1.33%
February	1,349,447	1,378,262	2.14%	1,388,462	0.74%
March	1,356,219	1,383,555	2.02%	1,385,333	0.13%
April	1,357,332	1,380,689	1.72%	1,386,083	0.39%
May	1,357,312	1,382,016	1.82%	1,391,298	0.67%
June	1,359,485	1,383,050	1.73%	1,394,568	0.83%
July	1,360,287	1,377,907	1.30%	1,397,861	1.45%
August	1,361,655	1,381,638	1.47%	1,401,964	1.47%
September	1,363,126	1,380,313	1.26%	1,402,071	1.58%
<b>October</b>	<b>1,363,322</b>	<b>1,379,110</b>	<b>1.16%</b>	<b>1,410,307</b>	<b>2.26%</b>

Average Weekday Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	56,666	56,152	-0.91%	57,969	3.24%
December	55,712	55,642	-0.12%	56,016	0.67%
January	48,922	51,994	6.28%	53,226	2.37%
February	50,800	52,341	3.03%	53,660	2.52%
March	53,704	54,932	2.29%	53,560	-2.50%
April	55,226	55,404	0.32%	56,690	2.32%
May	56,057	55,964	-0.17%	56,735	1.38%
June	56,988	57,586	1.05%	58,857	2.21%
July	56,554	56,693	0.25%	57,741	1.85%
August	54,834	54,558	-0.50%	56,083	2.79%
September	57,125	56,935	-0.33%	57,773	1.47%
<b>October</b>	<b>56,955</b>	<b>57,769</b>	<b>1.43%</b>	<b>59,944</b>	<b>3.76%</b>

## Metropolitan Transportation Authority

October

## New Haven Line

Revenue Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	3,144,456	3,302,176	5.02%	3,387,122	2.57%
December	3,538,794	3,605,579	1.89%	3,486,070	-3.31%
January	2,947,100	3,025,859	2.67%	3,134,605	3.59%
February	2,782,877	2,996,638	7.68%	2,891,429	-3.51%
March	3,313,603	3,510,157	5.93%	3,367,493	-4.06%
April	3,405,883	3,321,726	-2.47%	3,260,548	-1.84%
May	3,367,996	3,364,663	-0.10%	3,457,123	2.75%
June	3,585,529	3,626,067	1.13%	3,593,126	-0.91%
July	3,619,740	3,417,607	-5.58%	3,381,084	-1.07%
August	3,404,776	3,498,487	2.75%	3,498,977	0.01%
September	3,435,529	3,385,380	-1.46%	3,270,019	-3.41%
<b>October</b>	<b>3,573,096</b>	<b>3,464,018</b>	<b>-3.05%</b>	<b>3,564,522</b>	<b>2.90%</b>
<b>12 Month Ave</b>	<b>3,343,282</b>	<b>3,376,530</b>	<b>0.99%</b>	<b>3,357,677</b>	<b>-0.56%</b>
<b>Year-to-Date</b>	<b>33,436,129</b>	<b>33,610,602</b>	<b>0.52%</b>	<b>33,418,926</b>	<b>-0.57%</b>
12 Month Averages					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	3,286,737	3,356,425	2.12%	3,383,609	0.81%
December	3,300,926	3,361,990	1.85%	3,373,650	0.35%
January	3,293,854	3,368,554	2.27%	3,382,712	0.42%
February	3,296,233	3,386,367	2.73%	3,373,944	-0.37%
March	3,308,195	3,402,747	2.86%	3,362,056	-1.20%
April	3,314,501	3,395,733	2.45%	3,356,957	-1.14%
May	3,315,859	3,395,456	2.40%	3,364,662	-0.91%
June	3,326,824	3,398,834	2.16%	3,361,917	-1.09%
July	3,332,763	3,381,989	1.48%	3,358,874	-0.68%
August	3,337,511	3,389,799	1.57%	3,358,915	-0.91%
September	3,342,874	3,385,620	1.28%	3,349,301	-1.07%
<b>October</b>	<b>3,343,282</b>	<b>3,376,530</b>	<b>0.99%</b>	<b>3,357,677</b>	<b>-0.56%</b>
Average Weekday Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	139,574	140,206	0.45%	140,624	0.30%
December	138,141	138,530	0.28%	137,234	-0.94%
January	120,958	128,715	6.41%	129,332	0.48%
February	123,893	128,006	3.32%	128,403	0.31%
March	129,533	134,141	3.56%	128,829	-3.96%
April	134,344	134,596	0.19%	134,704	0.08%
May	136,510	134,891	-1.19%	134,432	-0.34%
June	140,974	142,822	1.31%	141,155	-1.17%
July	139,710	138,421	-0.92%	136,059	-1.71%
August	133,604	132,239	-1.02%	131,734	-0.38%
September	138,697	137,423	-0.92%	135,219	-1.60%
<b>October</b>	<b>138,865</b>	<b>138,307</b>	<b>-0.40%</b>	<b>138,540</b>	<b>0.17%</b>

## Metropolitan Transportation Authority

October

## West of Hudson

Revenue Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	130,683	138,438	5.93%	131,384	-5.10%
December	145,717	146,030	0.21%	135,777	-7.02%
January	130,679	127,177	-2.68%	129,288	1.66%
February	122,183	129,410	5.91%	120,495	-6.89%
March	152,441	152,725	0.19%	145,669	-4.62%
April	148,284	138,677	-6.48%	129,594	-6.55%
May	142,922	144,993	1.45%	140,860	-2.85%
June	156,006	153,199	-1.80%	144,359	-5.77%
July	157,205	147,611	-6.10%	133,723	-9.41%
August	147,488	155,303	5.30%	144,020	-7.27%
September	149,545	145,165	-2.93%	129,165	-11.02%
<b>October</b>	<b>154,529</b>	<b>122,420</b>	<b>-20.78%</b>	<b>136,919</b>	<b>11.84%</b>
12 Month Ave	144,807	141,762	-2.10%	135,104	-4.70%
Year-to-Date	1,461,282	1,416,680	-3.05%	1,354,092	-4.42%
12 Month Averages					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	139,469	145,453	4.29%	141,175	-2.94%
December	140,334	145,479	3.67%	140,320	-3.55%
January	140,554	145,187	3.30%	140,496	-3.23%
February	140,957	145,790	3.43%	139,753	-4.14%
March	141,994	145,813	2.69%	139,165	-4.56%
April	142,659	145,013	1.65%	138,408	-4.55%
May	142,800	145,185	1.67%	138,064	-4.91%
June	143,599	144,951	0.94%	137,327	-5.26%
July	143,881	144,152	0.19%	136,170	-5.54%
August	144,227	144,803	0.40%	135,230	-6.61%
September	144,710	144,438	-0.19%	133,896	-7.30%
<b>October</b>	<b>144,807</b>	<b>141,762</b>	<b>-2.10%</b>	<b>135,104</b>	<b>-4.70%</b>
Average Weekday Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	7,241	7,279	0.52%	6,572	-9.71%
December	6,639	6,649	0.15%	6,469	-2.71%
January	6,546	6,686	2.14%	6,467	-3.28%
February	6,414	6,464	0.78%	6,326	-2.13%
March	6,933	6,651	-4.07%	6,344	-4.62%
April	6,744	6,597	-2.18%	6,461	-2.06%
May	7,138	6,908	-3.22%	6,414	-7.15%
June	7,095	6,967	-1.80%	6,565	-5.77%
July	7,162	7,371	2.92%	6,678	-9.40%
August	7,012	6,769	-3.47%	6,277	-7.27%
September	7,124	6,916	-2.92%	6,451	-6.72%
<b>October</b>	<b>7,028</b>	<b>5,819</b>	<b>-17.20%</b>	<b>6,227</b>	<b>7.01%</b>

## Metropolitan Transportation Authority

October

## Port Jervis Line

## Revenue Passengers

Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	78,265	82,436	5.33%	79,739	-3.27%
December	87,965	86,298	-1.90%	81,677	-5.35%
January	77,335	74,238	-4.00%	76,900	3.59%
February	72,288	76,153	5.35%	71,338	-6.32%
March	89,367	90,131	0.85%	85,505	-5.13%
April	88,480	82,641	-6.60%	77,209	-6.57%
May	86,116	86,106	-0.01%	84,459	-1.91%
June	92,381	89,903	-2.68%	85,413	-4.99%
July	93,755	87,847	-6.30%	80,558	-8.30%
August	88,786	92,440	4.12%	86,210	-6.74%
September	89,066	87,499	-1.76%	78,687	-10.07%
<b>October</b>	<b>93,069</b>	<b>76,555</b>	<b>-17.74%</b>	<b>85,570</b>	<b>11.78%</b>
12 Month Ave	86,406	84,354	-2.38%	81,105	-3.85%
Year-to-Date	870,643	843,513	-3.12%	811,849	-3.75%

## 12 Month Averages

Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	84,467	86,754	2.71%	84,129	-3.03%
December	84,861	86,615	2.07%	83,744	-3.31%
January	84,841	86,357	1.79%	83,966	-2.77%
February	84,908	86,679	2.09%	83,565	-3.59%
March	85,316	86,742	1.67%	83,179	-4.11%
April	85,539	86,256	0.84%	82,727	-4.09%
May	85,557	86,255	0.82%	82,589	-4.25%
June	85,967	86,049	0.09%	82,215	-4.45%
July	85,991	85,556	-0.51%	81,608	-4.62%
August	86,194	85,861	-0.39%	81,089	-5.56%
September	86,406	85,730	-0.78%	80,354	-6.27%
<b>October</b>	<b>86,406</b>	<b>84,354</b>	<b>-2.38%</b>	<b>81,105</b>	<b>-3.85%</b>

## Average Weekday Passengers

Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	4,335	4,334	-0.02%	3,989	-7.96%
December	4,008	3,930	-1.95%	3,892	-0.97%
January	3,875	3,902	0.70%	3,847	-1.41%
February	3,793	3,803	0.26%	3,743	-1.58%
March	4,065	3,926	-3.42%	3,725	-5.12%
April	4,024	3,931	-2.31%	3,847	-2.14%
May	4,300	4,103	-4.58%	3,847	-6.24%
June	4,202	4,089	-2.69%	3,885	-4.99%
July	4,273	4,386	2.64%	4,022	-8.30%
August	4,221	4,030	-4.52%	3,758	-6.75%
September	4,243	4,169	-1.74%	3,929	-5.76%
<b>October</b>	<b>4,233</b>	<b>3,638</b>	<b>-14.06%</b>	<b>3,892</b>	<b>6.98%</b>



## Metropolitan Transportation Authority

October

## Pascack Valley Line

## Revenue Passengers

Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	52,418	56,002	6.84%	51,645	-7.78%
December	57,752	59,732	3.43%	54,100	-9.43%
January	53,344	52,939	-0.76%	52,388	-1.04%
February	49,895	53,257	6.74%	49,157	-7.70%
March	63,074	62,594	-0.76%	60,164	-3.88%
April	59,804	56,036	-6.30%	52,385	-6.52%
May	56,806	58,887	3.66%	56,401	-4.22%
June	63,625	63,296	-0.52%	58,946	-6.87%
July	63,450	59,764	-5.81%	53,165	-11.04%
August	58,702	62,863	7.09%	57,810	-8.04%
September	60,479	57,666	-4.65%	50,478	-12.46%
<b>October</b>	<b>61,460</b>	<b>45,865</b>	<b>-25.37%</b>	<b>51,349</b>	<b>11.96%</b>
12 Month Ave	58,401	57,408	-1.70%	53,999	-5.94%
Year-to-Date	590,639	573,167	-2.96%	542,243	-5.40%

## 12 Month Averages

Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	55,001	58,699	6.72%	57,045	-2.82%
December	55,473	58,864	6.11%	56,576	-3.89%
January	55,713	58,831	5.60%	56,530	-3.91%
February	56,049	59,111	5.46%	56,188	-4.94%
March	56,678	59,071	4.22%	55,986	-5.22%
April	57,121	58,757	2.86%	55,682	-5.23%
May	57,243	58,930	2.95%	55,475	-5.86%
June	57,632	58,903	2.21%	55,112	-6.44%
July	57,890	58,596	1.22%	54,562	-6.88%
August	58,033	58,942	1.57%	54,141	-8.15%
September	58,304	58,708	0.69%	53,542	-8.80%
<b>October</b>	<b>58,401</b>	<b>57,408</b>	<b>-1.70%</b>	<b>53,999</b>	<b>-5.94%</b>

## Average Weekday Passengers

Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	2,906	2,945	1.34%	2,583	-12.29%
December	2,631	2,719	3.34%	2,577	-5.22%
January	2,671	2,784	4.23%	2,620	-5.89%
February	2,621	2,661	1.53%	2,583	-2.93%
March	2,868	2,725	-4.99%	2,619	-3.89%
April	2,720	2,666	-1.99%	2,614	-1.95%
May	2,838	2,805	-1.16%	2,567	-8.48%
June	2,893	2,878	-0.52%	2,680	-6.88%
July	2,889	2,985	3.32%	2,656	-11.02%
August	2,791	2,739	-1.86%	2,519	-8.03%
September	2,881	2,747	-4.65%	2,522	-8.19%
<b>October</b>	<b>2,795</b>	<b>2,181</b>	<b>-21.97%</b>	<b>2,335</b>	<b>7.06%</b>

## MTA Bridges &amp; Tunnels

Revenue Vehicles					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	23,400,720	24,808,987	6.02%	25,130,058	1.29%
December	24,198,616	25,398,337	4.96%	25,273,158	-0.49%
January	20,983,289	22,206,860	5.83%	23,452,652	5.61%
February	19,983,679	22,379,445	11.99%	21,620,767	-3.39%
March	23,836,645	25,678,007	7.72%	24,595,618	-4.22%
April	24,825,057	25,460,062	2.56%	25,354,830	-0.41%
May	26,520,622	27,041,559	1.96%	26,717,750	-1.20%
June	26,140,659	27,281,473	4.36%	27,133,265	-0.54%
July	26,900,933	27,279,840	1.41%	27,505,585	0.83%
August	27,179,957	27,620,446	1.62%	28,132,320	1.85%
September	25,176,781	26,043,256	3.44%	26,498,572	1.75%
<b>October</b>	<b>26,225,167</b>	<b>26,022,431</b>	<b>-0.77%</b>	<b>27,109,361</b>	<b>4.18%</b>
12 Month Ave	24,614,344	25,601,725	4.01%	25,710,328	0.42%
Year-to-Date	247,772,789	257,013,379	3.73%	258,120,720	0.43%
12 Month Averages					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	23,771,189	24,731,699	4.04%	25,628,481	3.63%
December	23,868,075	24,831,676	4.04%	25,618,050	3.17%
January	23,887,740	24,933,640	4.38%	25,721,866	3.16%
February	23,994,571	25,133,288	4.75%	25,658,642	2.09%
March	24,028,328	25,286,734	5.24%	25,568,443	1.11%
April	24,110,851	25,339,651	5.10%	25,559,674	0.87%
May	24,181,827	25,383,063	4.97%	25,532,690	0.59%
June	24,245,637	25,478,131	5.08%	25,520,339	0.17%
July	24,367,763	25,509,706	4.69%	25,539,151	0.12%
August	24,470,097	25,546,414	4.40%	25,581,808	0.14%
September	24,528,065	25,618,620	4.45%	25,619,751	0.00%
<b>October</b>	<b>24,614,344</b>	<b>25,601,725</b>	<b>4.01%</b>	<b>25,710,328</b>	<b>0.42%</b>
Average Weekday Passengers					
Service Month	2014-2015	2015-2016	Percentage Change	2016-2017	Percentage Change
November	810,122	853,314	5.33%	861,615	0.97%
December	809,947	844,618	4.28%	858,227	1.61%
January	709,750	790,094	11.32%	807,271	2.17%
February	752,873	803,140	6.68%	802,086	-0.13%
March	790,371	845,050	6.92%	812,009	-3.91%
April	837,547	864,797	3.25%	871,220	0.74%
May	880,801	897,859	1.94%	893,394	-0.50%
June	884,039	921,464	4.23%	922,040	0.06%
July	887,418	907,622	2.28%	910,740	0.34%
August	884,166	900,785	1.88%	918,820	2.00%
September	852,788	889,931	4.36%	909,832	2.24%
<b>October</b>	<b>862,734</b>	<b>866,829</b>	<b>0.47%</b>	<b>897,370</b>	<b>3.52%</b>

# Fuel Hedge Program

# Current ULSD Hedges

Date	Gallons Hedged	Percent of Expected Gallons Purchased	Weighted Average Hedge Price for Each Month	2017 Adopted Budget (February Plan) Forecasted Commodity Price	2018 Final Proposed Budget (November Plan) Forecasted Commodity Price
December-17	2,855,312	51	1.55	1.58	1.62
January-18	2,796,239	51	1.59	1.66	1.61
February-18	2,791,133	55	1.62	1.66	1.61
March-18	2,959,365	50	1.64	1.66	1.61
April-18	2,865,517	53	1.64	1.66	1.61
May-18	2,901,106	49	1.64	1.66	1.61
June-18	3,056,905	52	1.63	1.66	1.61
July-18	3,040,592	50	1.64	1.66	1.61
August-18	3,140,227	50	1.64	1.66	1.61
September-18	3,013,560	50	1.65	1.66	1.61
October-18	2,895,797	50	1.66	1.66	1.61
November-18	2,695,310	50	1.68	1.66	1.61
December-18	2,580,773	46	1.67	1.66	1.61
January-19	2,293,265	42	1.66	1.75	1.63
February-19	1,900,569	37	1.65	1.75	1.63
March-19	1,980,860	33	1.66	1.75	1.63
April-19	1,568,084	29	1.67	1.75	1.63
May-19	1,472,539	25	1.69	1.75	1.63
June-19	1,230,983	21	1.71	1.75	1.63
July-19	1,013,368	17	1.74	1.75	1.63
August-19	784,868	12	1.78	1.75	1.63
September-19	502,059	8	1.81	1.75	1.63
October-19	241,104	4	1.85	1.75	1.63

# Annual Impact as of November 27, 2017

	(\$ in millions)		
	<u>2017</u>	<u>2018</u>	<u>2019</u>
<b><u>Ultra Low Sulfur Diesel</u></b>			
Current Prices vs. 2017 Adopted Budget	(\$5.411)	(\$17.588)	(\$8.435)
Impact of Hedge	<u>0.806</u>	<u>7.631</u>	<u>4.013</u>
<b>Net Impact: Fav/(Unfav)</b>	(\$4.606)	(\$9.957)	(\$4.422)
 <b><u>Compressed Natural Gas</u></b>			
Current Prices vs. 2017 Adopted Budget	\$13.875	\$6.871	\$6.834
Impact of Hedge	<u>0.000</u>	<u>0.000</u>	<u>0.000</u>
<b>Net Impact: Fav/(Unfav)</b>	\$13.875	\$6.871	\$6.834
 <b><u>Summary</u></b>			
Current Prices vs. 2017 Adopted Budget	\$8.464	(\$10.716)	(\$1.601)
Impact of Hedge	<u>0.806</u>	<u>7.631</u>	<u>4.013</u>
<b>Net Impact: Fav/(Unfav)</b>	\$9.270	(\$3.085)	\$2.412

**DECEMBER 2017**  
**MTA REAL ESTATE**  
**FINANCE COMMITTEE AGENDA ITEMS**

**1. ACTION ITEMS**

No action items this month

**2. INFORMATION ITEMS**

- a. Status report on month-to-month licenses
- b. Status report on agreements entered into directly by Real Estate Department
- c. Status report on Grand Central Terminal Vanderbilt Hall events
- d. Status report on Grand Central Terminal Graybar Passage retail kiosks

<b>Legal Name</b>	<b>Popular Name</b>	<b>Abbreviation</b>
New York City Transit Authority	MTA New York City Transit	NYC Transit
The Long Island Rail Road Company	MTA Long Island Rail Road	LIRR
Metro-North Commuter Railroad Company	MTA Metro-North Railroad	MNR
Triborough Bridge and Tunnel Authority	MTA Bridges and Tunnels	MTA B&T
MTA Capital Construction Company	MTA Capital Construction	MTACC
MTA Bus Company	MTA Bus Company	MTA Bus

*Staten Island Rapid Transit Operating Authority is a subsidiary of the Metropolitan Transportation Authority. Its popular name is MTA Staten Island Railway (abbreviated as SIR).*

*Manhattan and Bronx Surface Transit Operating Authority is a subsidiary of the New York City Transit Authority (abbreviated as MaBSTOA).*

# **INFORMATION ITEMS**

# Memorandum



## Metropolitan Transportation Authority

State of New York

**Date** December 11, 2017

**To** Members of the Finance Committee

**From** Jeffrey B. Rosen, Director, Real Estate

**Re** **Status of Month-to-Month Licenses for Passenger Amenities**

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In June 1988, the MTA Board adopted a policy, which allows the Real Estate Department to enter into month-to-month agreements for “passenger service oriented concessions without individual Committee or Board approval”. Attached is a status report of month-to-month agreements, which were executed pursuant to the policy.



## TENANTS CURRENTLY ON MONTH-TO-MONTH AGREEMENTS

**MONTH: DECEMBER 2017**

AGENCY	LOCATION (STATION)	TENANT/USE	SF	DATE OF AGREEMENT	MONTHLY COMPENSATION	COMMENT
1. MNR	Grand Central Terminal	Grand Central Coffee Corp., d/b/a Irving Farm	253	February 2013	\$9,966	RFP issued, new lease in negotiation. Anticipate termination of this mtm agreement in first qtr. of 2018.
2. MNR	Croton Harmon Station	Dry Cleaning Drop Off	714	August 2013	\$975.11	Proposer selected; preparing license agreement.
3. MNR	Grand Central Terminal	Devialet Inc.	225	April 24, 2017	\$30,000	GCT Development plans to maintain this space as a "pop-up" for the immediate future.
4. MNR	Grand Central Terminal	Moleskine	316	September 1, 2015	\$15,000	RFP issued 10/26/2017; Bids received 11/16/2017 and are under review.
5. NYCT	Church Avenue, Nostrand Line, Brooklyn	Mahabubar Rahman/Newsstand	120	September 2015	\$2,500	NYCT plans to construct an expanded elevator machine room at this location.

# Memorandum



## Metropolitan Transportation Authority

State of New York

**Date** December 11, 2017

**To** Members of the Finance Committee

**From** Jeffrey B. Rosen, Director, Real Estate

**Re** **Report on Agreements Entered into Directly by the Real Estate Department via the RFP or negotiation process with tenants in good standing or through the RFP process when 3 or more proposals have been received from responsible proposers for a standard retail location**

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Attached is a listing of agreements entered into directly by the Real Estate Department during preceding months, pursuant to the Board's resolutions of April 26, 2007 (Real Estate Policy #9) and November 13, 2013 (Real Estate Policy #33).

The resolutions authorizing Real Estate Policies #9 and #33 delegate authority to the Chairman, Executive Director, and Director of Real Estate to enter into lease or license agreements with tenants on behalf of the MTA and its agencies.

For each such agreement entered into pursuant to Real Estate Policy #9, the term may not exceed ten years, and aggregate compensation may not exceed \$300,000, or \$150,000 for five-year agreements. The resolution similarly delegates authority to renew license agreements with tenants in good standing with the same limitations.

For each such agreement entered into pursuant to Real Estate Policy #33, MTA Real Estate must have received at least three bids from responsible proposers, and must have entered into agreement with the responsible proposer which offered the highest guaranteed rent, on a present value basis.

# REPORT ON AGREEMENTS ENTERED INTO DIRECTLY BY THE REAL ESTATE DEPARTMENT PURSUANT TO BOARD POLICY

**December, 2017**

Agency/Project Manager	Renewal/RFP Generated	Lessee	Location/Use	Term	Rental		Annual Increase	Size/Weekday Ridership	Price/SF	
NYCT / A. Espinoza	RFP	M & F Business Corp.	125 St – Lexington Ave, Manhattan: 1 mezzanine and 2 platform locations / Newsstands	10 years	Year	Rent			Year	PSF
					1	\$445,872.00	--		1	\$902.57
					2	\$445,872.00	0%	494 square feet	2	\$902.57
					3	\$445,872.00	0%	total (including	3	\$902.57
					4	\$445,872.00	0%	42 sq. ft. of	4	\$902.57
					5	\$445,872.00	0%	storage space)	5	\$902.57
					6	\$445,872.00	0%	/ 30,024	6	\$902.57
					7	\$445,872.00	0%	weekday	7	\$902.57
					8	\$445,872.00	0%	passengers	8	\$902.57
					9	\$445,872.00	0%		9	\$902.57
					10	\$445,872.00	0%		10	\$902.57
List of all proposals:										
Proposer name:		NPV @ 7% discount rate:								
M & F Business Corp.		\$3,131,618								
S.F. News, Inc.		\$2,970,205								
Gulam Zilani		\$2,963,052								
Jet News, Inc.		\$2,376,418								
Syed Shobab Uddin		\$2,345,474								
Bachubhai Mehta		\$1,425,684								

# Memorandum



## Metropolitan Transportation Authority

State of New York

**Date** December 11, 2017  
**To** Members of the Finance Committee  
**From** Jeffrey B. Rosen, Director, Real Estate  
**Re** **GCT's Vanderbilt Hall Events Forecast**

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The following report will be presented to the Real Estate Committee by GCT Development on a monthly basis. The events forecast will show events planned for Vanderbilt Hall in the next three to four month period. This calendar will always be subject to last minute changes for technical or scheduling reasons.

2017 Vanderbilt Hall Events – December

Event	Date	Description	Space	Use
2017 Holiday Fair	11/6 - 12/28	Annual Holiday Fair with 40 vendors Booth Load in: Nov 6 - 10 Vendor Load in: Nov 11 - 12 Open: Nov 13 - Dec 24	Vanderbilt Hall	Public

# Memorandum



## Metropolitan Transportation Authority

State of New York

**Date** December 11, 2017  
**To** Members of the Finance Committee  
**From** Jeffrey B. Rosen, Director, Real Estate  
**Re** **GCT – Graybar Passage Retail Kiosks**

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The following report will be presented by GCT Development office of the Real Estate Department whenever a new retail Permit Agreement has been entered into under the Retail Kiosk program approved by the MTA Board in January 2006.

**GRAND CENTRAL TERMINAL**  
**GRAYBAR PASSAGE RETAIL KIOSK PROGRAM**  
**New Licensees-Month of December 2017**

<b>Licensee</b>	<b>License Dates</b>	<b>Use</b>	<b>Monthly Compensation</b>
Fego Gioielli	11/1/17-1/31/18	Retail sale of licensee produced jewelry	11/1/2017 \$6000 12/1/2017 \$6000 1/1/2018 \$3100
Sara Designs	11/1/17-1/31/18	Retail sale of licensee produced jewelry	11/1/2017 \$6000 12/1/2017 \$6000 1/1/2018 \$3100
Christina Stankard Jewelry	11/1/17-1/31/18	Retail sale of licensee produced jewelry	11/1/2017 \$6000 12/1/2017 \$6000 1/1/2018 \$3100
Jet Set Candy Jewelry	11/1/17-1/31/18	Retail sale of licensee produced jewelry	11/1/2017 \$6000 12/1/2017 \$6000 1/1/2018 \$3100
Neuhaus Belgian Chocolate	11/1/17-1/31/18	Retail sale of licensee produced chocolate	11/1/2017 \$6000 12/1/2017 \$6000 1/1/2018 \$3100
Love Thy Beast	11/1/17-1/31/18	Retail sale of pet accessories	11/1/2017 \$6000 12/1/2017 \$6000 1/1/2018 \$3100
Johnnie Walker Blue	11/19/17-12/30/17	Engraving of Johnnie Walker Blue Bottles and sale of alcohol	11/19/17-12/30/17 \$56,000