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Patrick J. Foye
Chairman and Chief Executive Officer

Metropolitan Transportation Authority
State of New York

December 9, 2020

Honorable Andrew M. Cuomo
Governor of New York State
NYS State Capitol Building
Albany, NY 12224

Honorable Thomas P. DiNapoli
Office of the State Comptroller
59 Maiden Lane, 31st Floor
New York, NY 10038

RE: Response to Final Report #2018-S-18– Selected Performance Measures

Gentlemen:

On January 6, 2020, the Office of the State Comptroller issued the above referenced audit report. As required by Section 170 of the Executive Law, I am providing you with the attached response which addresses the recommendations contained in the report.

Additionally, I will be working with staff to ensure that management is following up on and enforcing the audit's recommendations, where appropriate, and requesting regular, interim reports to that effect.

A copy of the final audit report is attached for your convenience.

Sincerely,

Patrick J. Foye
Chairman and Chief Executive Officer

c: Anni Zhu, Chief of Staff to the MTA Chairman and Chief Executive Officer
Michele Woods, Auditor General, MTA Audit Services

Attachment

Memorandum

New York City Transit

Date November 19, 2020

To Patrick Foye, Chairman, MTA

From Sarah Feinberg, Interim President, New York City Transit

Re **New York State Comptroller Report #2018-S-18 – MTA Selected Performance Measures: 90 Day Response**

In response to the requirements of Section 170 of the Executive Law to respond 90 days after receipt of the above-referenced audit report from the State Comptroller, we hereby provide you with steps taken by MTA New York City Transit (NYCT) to implement the recommendations outlined in the audit report and, where recommendations were not implemented, the reasons are set forth below. The stated purpose of the audit was to determine whether the MTA constituent agency performance measures are accurate and consistent, and to determine whether the MTA uses relevant metrics to measure its performance. The Audit covered the period from January 1, 2015 through August 22, 2018.

Comptroller Recommendation #1: Evaluate Transit Subways and LIRR MDBF to assure it is an easily understood, accurate representation of car fleet reliability and service reliability and determine whether changes need to be made regarding how the metrics are calculated and presented.

NYCT Response: As stated in our 30-day response, we have reviewed the proposal and made the determination to continue to use our current methodology as it is consistent with the current industry-wide definition of MDBF (Mean Distance Between Failures) in use since 1970. NYCT MDBF calculations and reporting are consistent with industry standards for railways worldwide. The purpose of the metric is to provide a common benchmark to compare disparate systems and car classes and assess the relative reliability. As stated in CoMET's (Community of Metros) Report on Key Performance Indicators (KPIs):

> "KPIs form a fundamental aspect of benchmarking as they enable performance to be compared on a universally consistent and understandable basis between organisations. By using objective KPIs that are agreed upon by all members, supported by up to eighteen years of development and analysis, comparability of business priorities at an international level has been achieved". (CoMET is the world's metro benchmarking group, representing 32 urban railways in 30 world cities located in North/South America, Europe and Asia).

With regard to the Auditors' comment that "*Transit needs to be more receptive to reporting additional information on service reliability on a train-trip basis. Transit may use the current MDBF for internal purposes; however, the public rides trains, not individual cars, and therefore*

the better measure for the public would be one of train-trip reliability," the Department of Subways has established several customer-focused metrics and performance indicators that include subway car reliability as part of the reporting calculations. Examples include: Service Delivered, Additional Train Time, Additional Platform Time, and Customer Journey Time Performance. These metrics incorporate all factors that affect customer trips, including car reliability.

Comptroller Recommendation #2: Report actual car class mileage instead of an allocation of miles in the calculation of MDBF to improve accuracy. Ensure that all failures for canceled trains are evaluated for inclusion in the MDBF calculation.

NYCT Response: NYCT continues to disagree with this recommendation. The report recommends that NYCT track and capture non-revenue mileage instead of the current practice of using an informed estimate representing less than one percent of total miles. Non-revenue miles are not representative of the car's complete reliability. Because many of the on-board systems are not exercised during non-revenue service (such as doors, braking, propulsion, etc.), failure rates would be skewed. Additionally, some non-revenue train movement is made because the train has already been deemed defective and is en route to the maintenance facility – another factor which would result in skewed results. The report also recommends that NYCT eliminate the five-minute threshold when calculating MDBF. However, MDBF is calculated throughout the railcar industry using a delay measurement threshold. Revising the calculation methodology would only result in inconsistent historical and industry-wide comparisons. Specifically, as stated in the CoMET KPI Report regarding MDBF:

> "This KPI measures reliability in terms of the distance travelled between incidents that cause five minutes or more of delay to service due to any cause (known as mean distance between failures, or MDBF). It is important to note that, while this is the primary indicator used, it only reflects the frequency of incidents and not the length of delays or the extent to which passengers are affected – both of which are very important (if hard to measure) factors when considering total reliability. Despite the limitations of the measure, this is one of the most important CoMET and Nova KPIs."

2 Broadway
New York, NY 10004

Craig Cipriano
President

Bus Company

Date: November 19, 2020

To: Patrick J. Foye, Chairman, Metropolitan Transportation Authority

From: Craig Cipriano, President, MTA Bus Company

Subject: **New York State Comptroller Report #2018-S-18 – MTA Selected Performance Measures: 90 Day Response / MTA Bus Company**

In response to the requirements of Section 170 of the Executive Law to respond 90 days after receipt of the above-referenced audit report from the State Comptroller, we hereby provide you with steps taken by MTA Bus Company to implement the recommendations outlined in the audit report and, where recommendations were not implemented, the reasons are set forth below. The stated purpose of the audit was to determine whether the MTA constituent agency performance measures are accurate and consistent, and to determine whether the MTA uses relevant metrics to measure its performance. The Audit covered the period from January 1, 2015 through August 22, 2018.

Comptroller Recommendation #3: Adjust the MTA Bus ridership methodology for FTA reporting to properly identify non-revenue riders.

MTA Bus Response: The recommendation is accepted and is being implemented. Starting with the 2019 reporting cycle, MTA Bus is calculating non-revenue ridership in all the related categories.

cc: K. Swift
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Phillip Eng
President

Long Island Rail Road

November 20, 2020

Mr. Patrick Foye
Chairman and Chief Executive Officer
Metropolitan Transportation Authority
2 Broadway
New York, NY 10004

RE: MTA Long Island Rail Road
Performance Measures
Report 2018-S-18

Dear Chairman Foye:

I am responding on behalf of the Long Island Railroad (LIRR) to the above-referenced report in compliance with Section 170 of the Executive Law. As described in our 30-day response dated November 7, 2019, and again in this letter, the LIRR already has made significant progress implementing the six recommendations contained in the report.

Before addressing the recommendations of the report, the LIRR would like to reiterate that the Mean Distance Between Failure (MDBF) metric is a consistent, valid and appropriate measure for car reliability. MDBF is used to hold manufacturers accountable and to consistently measure the LIRR against prior years. Since a train is built from individual cars that are combined to compose varying train sets, accounting for the mechanical reliability of each asset makes sense.

Additionally, the LIRR's primary concern is with its customers, whose primary interest is car availability. Car availability metrics include On Time Performance (OTP) and Short Trains, both of which are dependent upon MDBF. More specifically, cars out of service translate into shorter trains. Reducing short trains provides more seats and capacity, giving the customer a more comfortable experience while assisting the flow of passengers on and off the trains, which in turn improves OTP.

In 2019, the LIRR set a goal to improve cars out of service by 10%. With improved MDBF, the LIRR exceeded that goal and decreased short trains by 25.1%. Thus, improving MDBF is a good measure of the LIRR's efforts to identify and address areas of concern and is therefore a valid metric for its intended use.

Below is the status on the six specific recommendations included in the report.

Recommendation No.1

- Evaluate LIRR MDBF to assure it is an easily understood, accurate representation of car fleet reliability and service reliability and determine whether changes need to be made regarding how the metrics are calculated and presented.

LIRR Response:

The LIRR adheres to the commuter rail accepted industry standard of measuring fleet reliability based on the On-Time Performance metric. Per this standard, fleet reliability is measured as the percent of trains that reach their final destination within five (5) minutes and 59 seconds of their scheduled arrival time.

Regarding the Mean Distance Between Failure (MDBF) metric, the LIRR is satisfied with how it is calculated as it is consistent with industry standards. The State Comptroller offered the following comment to the LIRR's 30-day response: "Our point is that many equipment failures are eliminated from the calculation because they did not delay the train by six minutes. By eliminating these failures, LIRR does not have a complete picture of reliability for its equipment." The LIRR does not agree with this assessment. Mechanical failures causing delays less than 5:59 are excluded when measuring the reliability of the LIRR's train equipment (i.e., MDBF) as those failures do not impact actual train service. The LIRR's operation contains numerous built-in redundancies such that if one system component fails it can be mitigated. This allows the LIRR to address minor fleet reliability without affecting service. If adjustments or component replacement is necessary, the required maintenance actions and/or component usage are tracked in the Corporate Asset Management System. Although this data is important for scheduling repairs and maintenance planning (i.e. Reliability Centered Maintenance interval changes, design changes, etc.), it is not useful as a fleet reliability metric. As stated in the 30-day response, this is consistent with the rail industry. Therefore, the LIRR sees no need to change how MDBF is calculated and presented.

LIRR Implementation Status: Implemented

Recommendation No. 2

- Ensure that all failures for canceled trains are evaluated for inclusion in the MDBF calculation. Ensure that each train car with a failure is included in the count of failures.

LIRR Response:

The LIRR already includes all relevant primary failures in the calculation of MDBF. "Mechanical failures" are more accurately described as failures caused by primary on-board equipment failures that cause a delay. Not every reported condition is the result of a mechanical failure. Considering every reported symptom or condition a "failure" would change the purpose and therefore the usefulness of the MDBF metric.

LIRR Implementation Status: Implemented

Recommendation No. 3

- Update the survey used to calculate commuter railroads' ridership statistics, including, but not limited to, consideration of ticket use patterns; changes in the composition and travel habits of customers; and changes in ticket, pass, and refund policies.

LIRR Response:

As described in our 30-day response, the LIRR uses the following formula confident that it acceptably reflects current travel patterns of LIRR ridership as well as factors in specific ticket sales data (e.g., individuals who frequently telecommute would be more likely to purchase a ten-trip or weekly ticket than stick with a monthly ticket):

- Monthly Ridership = Number of Monthly Tickets Sold * (1.8 * Number of Monthly Work Days) + (0.2 * Number of Monthly Non-Workdays)
- Weekly Ridership = Number of Weekly Tickets Sold * (10) * (Number of Monthly Workdays) / (Number of Monthly Workdays and Holidays)

The LIRR looks forward to the MTA's 2021 implementation of a multi-agency New Fare Payment System (OMNY) that will strengthen the LIRR's ability to track, monitor and analyze ridership data. Once introduced, the LIRR will reassess its ridership calculation methodology reflected in the above formula as well as to create consistency across agencies as appropriate. As of June 2020, a state-of-the-art passenger counting system was activated on the LIRR's M7 fleet. The system utilizing load weight will provide a range of occupancy in real-time, by car, with updates every few minutes. The visual feature of the application made available to passengers as well as in-station signage will allow passengers to, relative to where they are standing on a platform, select the car of an incoming train with the most available seating. The same passenger counting system will be used on LIRR's full future fleet of M9s and M9As. In the interim, passenger counting data is available via the infrared sensors on the M9 fleet. In September 2020, LIRR added real-time passenger loading to its non-powered coaches, bringing this capability to 100% of the fleet in passenger service.

LIRR's Service Planning department will also use data from the passenger counting system to monitor train loads and adjust service schedules as necessary to meet demand.

LIRR Implementation Status: Implemented

Recommendation No. 4

- Examine methods used by other commuter railroads to develop ridership counts and technology changes to improve counting methodologies.

LIRR Response:

As noted in our 30-day response, it is important to reiterate the distinction between train counts performed by LIRR's Service Planning and ridership calculations as performed by the Controller's Office. The former is conducted only several times per year to evaluate the adequacy of service levels and to assess train capacity. The latter utilizes actual daily ticket sales data to estimate overall ridership and revenue.

The LIRR's Controller has already conferred with and established a reciprocal relationship with Chicago Rail for sharing ideas relative to ridership. We will continue to explore how other commuter railroads calculate ridership. However, and as noted above, the LIRR will refrain from introducing changes to its ridership calculation methodology until after OMNY is implemented.

LIRR Implementation Status: Ongoing

Recommendation No. 5

- Enhance transparency in disclosure of the ridership metric by explaining the means by which the statistic is developed.

LIRR Response:

Beginning with October 2019 results, the LIRR began including a footnote on LIRR official documents citing the ridership metric used (e.g., ticket sales or passenger counts).

LIRR Implementation Status: Implemented

Recommendation No. 6

- Both commuter railroads should evaluate the use of electronic ticket activation data as part of their ridership calculation and document the results.

LIRR Response:

Please refer to Recommendation #3 & # 4 regarding OMNY.

LIRR Implementation Status: Ongoing

Sincerely,

Phillip Eng
President

cc: M. Young
R. Free
C. Daly
E. Rodriguez
M. Reilly
S. Yip
J. Rosado
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Catherine A. Rinaldi
President

Metro-North Railroad

November 25, 2020

Mr. Patrick Foye
Chairman and Chief Executive Officer
Metropolitan Transportation Authority
2 Broadway, 20th Floor
New York, NY 10017

Re: 180 Day Response to OSC Report 2018-S-18 Selected Performance Measures

Dear Chairman Foye:

This is a follow-up to the Office of the New York State Comptroller report issued in January of this year on Selected Performance Measures at the MTA. Metro-North Railroad (MNR) has taken several steps since then to improve and strengthen our ridership statistical analysis and reporting, which was the primary focus of the MNR - related findings.

Updates to the original recommendations are as follows:

Recommendation 3:
Update the survey being used to calculate commuter railroads' ridership statistics, including, but not limited to, consideration of ticket use patterns; changes in the composition and travel habits of customers; and changes in ticket, pass, and refund policies.

MNR Response to Recommendation 3:
In Progress. We agree that the ridership and demographic data used to calculate ridership statistics should be brought up to date. MNR is engaged in an MTA wide initiative to implement a new fare payment system (NFPS). It is expected that the NFPS will provide the ability to track, monitor and analyze ridership data across the MTA, including Metro-North Railroad. In our opinion, the cost benefit of updating the ridership methodology would be more appropriate after the NFPS implementation. Any efforts to change the methodology currently being used would not be cost-effective, as better data will be available from the NFPS soon after completion of any revision to the current methodology.

Update. The development and testing of new ticket technology as well as updated demographic surveying has been slowed as a result of COVID-19, and the impact it has had on ridership. Technology upgrades for NFPS are not expected to start testing until late 2021. The 2020 passenger survey used for mode and market share analysis will not be performed this year due to COVID-19. Accordingly, progress with enhanced ridership analysis has been slowed.

Recommendation 4:
Examine methods used by other commuter railroads to develop ridership counts and technology changes to improve counting methodologies.

MNR Response to Recommendation 4:
In Progress. MNR is currently investigating innovations in people counting technologies and is performing a demonstration project to determine the accuracy and effectiveness of the current state of the art in counting commuter rail riders. As part of the lead-in to this pilot, MNR has communicated and/or met with other commuter railroads including MBTA (Boston) and NJ TRANSIT. In addition, the next generation of rail cars for Metro-North Railroad will include passenger counting technology built into the rail cars, similar to that which is installed in the LIRR's new M9/M9A fleet, currently being delivered. MNR is constantly looking to find new and better methodologies to count riders and will continue to communicate with peers and vendors to make use of new techniques and technology as they become available.

To be clear, however, MNR's ridership counts are developed through a process performed at different points throughout the year, as a service planning tool. These counts are used to determine seating capacity assignments to individual trains; ensure compliance with service guidelines; and identify areas where service changes would be beneficial to customers. Ridership counts do not purport to document total system ridership, but instead offer a snapshot of average daily ridership on individual trains, which is used for the purposes outlined here. These ridership counts are not used in any way to develop or inform the official ridership reporting that was reviewed for this audit.

Update. Earlier this month, MNR launched a new feature in the TrainTime™ app that lets customers track in real time the amount of space available on each car of an approaching train by estimating passenger loads using load weigh diagnostics. The feature is designed to help customers keep appropriate social distance during the COVID-19 pandemic and is currently available for trains operating on the electric portions of the Harlem Line and Hudson Line. These trains are composed of M7 railcars, and development is in progress for the M8 car fleet that provides service on the New Haven Line, and for Metro-North's diesel fleet. MNR is also testing on-board cameras to enhance passenger counting capabilities and will continue to develop and enhance that capacity going forward.

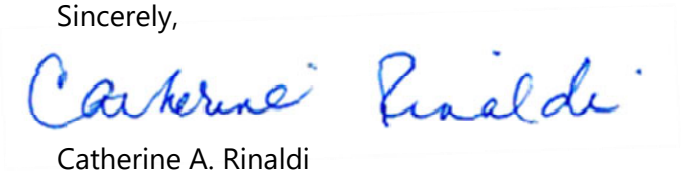
Recommendation 6:
Both commuter railroads should evaluate the use of electronic ticket activation data as part of their ridership calculation and document the results.

MNR Response to Recommendation 6:
In Progress. As indicated above, the New Fare Payments System could provide benefits including ridership data for all ticket types, including multi-ride and single-ride tickets, electronic and paper-based. As this data becomes available to MNR, we will update our ridership reporting methodology to include this data, and we will document the change in methodology for all stakeholders.

To be clear, however, electronic weekly and monthly commutation passes do not require validation for each trip. Instead, these passes are validated by the customer on the first use, and remain validated for the remaining validity time period of the ticket. In addition, electronic weekly and monthly passes are not scanned by the train crews except on the periodic "punch days," which are generally scheduled one or two times per month. As such, use of electronic validation data will not obviate the need to calculate the number of trips taken on weekly and monthly commutation passes, but the data from electronic validation may be used to update the survey data on which those calculations are based.

Update: The testing of ticket technology using chips that can be electronically validated when they are scanned is expected to start in late 2021. The goal is to enhance the ridership reporting methodology utilizing this data, together with updated survey data. COVID-19 has caused major disruptions to ridership patterns, and until ridership can stabilize, progress with enhanced ridership analysis has been slowed.

Sincerely,



Catherine A. Rinaldi

cc: M. Woods
S. Doering
S. Sarch
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N. Gilbertson
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