

# Metropolitan Transportation Authority – MTA Bridges & Tunnels, MTA Bus Company, and New York City Transit-Department of Buses

---

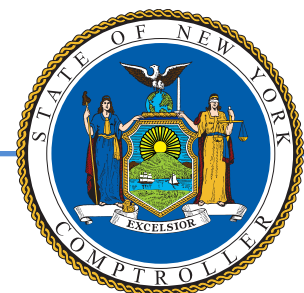
## Risk Assessment and Implementation of Measures to Address Extreme Weather Conditions

Report 2023-S-4 | January 2025

OFFICE OF THE NEW YORK STATE COMPTROLLER  
Thomas P. DiNapoli, State Comptroller

---

Division of State Government Accountability



# Audit Highlights

---

## Objectives

To determine whether the Metropolitan Transportation Authority (MTA)—Bridges & Tunnels (B&T), MTA Bus Company (MTA Bus), and New York City Transit-Department of Buses (Transit Bus)—identified the potential damage to its transportation systems and developed plans to mitigate the effect of extreme weather conditions and flooding; and whether the plans were tested/updated and the weather-related equipment was inspected/maintained to ensure it can be deployed when needed. The audit covered the period from April 2009 through July 2023.

## Background

MTA's bus operating units (Transit Bus and MTA Bus; hereafter collectively referred to as "Bus Operations") include 28 depots—20 operated by Transit and eight by MTA Bus. The Bus Command Center (BCC), located in East New York, Brooklyn, is responsible for overseeing all of MTA's Bus Operations. Decisions are made at BCC that apply to both Transit Bus and MTA Bus. BCC reports to the Vice President of Bus Operations and ultimately to Transit's Senior Vice President – Buses, who also serves as the Senior Vice President of MTA Bus.

In 2007, the Chair of the MTA appointed a Blue Ribbon Commission on Sustainability and the MTA (Blue Ribbon Commission), which was charged with making sustainability-related recommendations to MTA and its agencies. In 2009, MTA issued the Blue Ribbon Commission's final report with recommendations in a number of key areas of sustainability planning. It sets apart 11 recommendations specifically related to climate adaptation to prepare for rising sea levels, storms, and severe weather events (one transformational that calls for MTA to develop and implement a climate-adaptation decision-making matrix and 10 near-term recommendations, including having a climate change adaptation master plan). The report predicted that, without an adequate investment in adaptation measures, climate change will have even greater adverse impacts on MTA's vital infrastructure, operations, and revenue streams in the future.

Superstorm Sandy hit the New York area on October 29, 2012, causing significant coastal flooding and approximately \$5 billion in damage to MTA assets. The Queens-Midtown Tunnel, a vehicular tunnel under the East River, filled with salt water. Although it reopened about 10 days later, repairs went on for years. Superstorm Sandy also took its toll on the bus system. While MTA prepared its buses for the storm by moving vehicles to higher ground, six bus depots in low-lying areas flooded.

The MTA network is considered an irreplaceable asset. MTA B&T has committed \$4.95 billion in capital program funding from 2010–2019 and has another \$3.33 billion in capital projects programmed for 2020–2024. MTA Bus has also committed \$673 million in capital program funding from 2010–2019 and has another \$871 million in capital projects programmed for 2020–2024. This includes the major restoration-resiliency projects stemming from Superstorm Sandy.

The development of the Master Plan (planned elements of the project, along with estimated budgets and, in some cases, schedules) serves as a tool for decision-making and consensus-building. Key strategic issues are identified and resolved as a result of the analysis performed during the Master Plan's development. Project Management Procedures require that a budget estimate be prepared in the "year dollars" of the Master Plan document (i.e., an estimate as if the project were to be awarded immediately). Escalation to the year of award is handled when a project enters a future capital program.

---

Inspection and maintenance of B&T and Bus Operations equipment is critical to ensure the system is prepared for future extreme weather events. Consequently, both B&T and Bus Operations are required to conduct inspections of their storm equipment and vehicles periodically. Preventive maintenance (PM) is performed to detect or prevent the degradation of vehicles and equipment in order to sustain or extend their useful life.

In addition, both B&T and Bus Operations developed several weather plans/procedures that can be activated for extreme weather-related conditions and detailed procedures to be followed leading up to a storm event and following its impact.

## Key Findings

- B&T and Bus Operations did not conduct a systemwide risk assessment to identify the potential for damage to their transportation systems. However, both have developed and carried out projects to mitigate the effects of coastal storms and related flooding, largely in the wake of Superstorm Sandy.
- Of nine capital projects that we reviewed (six at B&T and three for Bus Operations [bus depots]), we found that the amount expended exceeded the original contract award amount for five projects, was lower for three projects, and was within the contract award amount for one project. For the same nine projects, substantial completion<sup>1</sup> was late for six projects (from 1 to 6 months), on schedule for two projects, and ahead of schedule for one project.
- Inspections, PM, and corrective maintenance tasks were not completed as required or were not documented. At two B&T facilities, we found no inspections of flood-proof doors had been conducted as per the contract during our audit scope, and we identified broken gasket seals (designed to prevent water leakage on the doors). Additionally, we found that issues reflected in prior inspection reports, such as cracks in crash barriers for a portal flood gate, were not corrected promptly, and subsequent reports indicated worsening damage over time.
- Vehicle inspection records at B&T facilities did not indicate what was inspected. We reviewed work orders and mileage records for 38 vehicles. The work orders listed tasks, but staff did not check off to denote which were completed nor did they note any issues found.
- Inspections were not conducted in accordance with the Bus Operations' Winter Operations Plan requirements or were insufficiently documented. For example, at four depots, records were provided for only 59 of the 336 inspections required for snow fighters (large trucks used for snow removal).

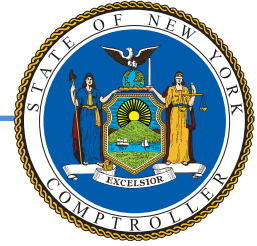
## Key Recommendations

- Periodically update the systemwide assessment, document progress made, and report on any new conditions requiring mitigation.
- Monitor projects to ensure costs do not markedly exceed the contract award amount.
- Maintain and inspect equipment regularly and in a timely manner as required.

---

<sup>1</sup> Substantial completion refers to a stage of construction where the construction manager determines that all contract work has been completed and it is acceptable to be placed in service, and all deliverables necessary to safely maintain all operating systems and equipment have been received, reviewed, and found acceptable.

- 
- Improve the vehicle PM by:
    - Recording each PM task completed on the work order.
    - Ensuring mileage is recorded and accurate for each vehicle for use in determining required maintenance.
  - Clarify in the Winter Operations Plan the responsibility for performing weekly/monthly inspections of snow fighter equipment.



---

**Office of the New York State Comptroller  
Division of State Government Accountability**

January 2, 2025

Janno Lieber  
Chair and Chief Executive Officer  
Metropolitan Transportation Authority  
2 Broadway  
New York, NY 10004

Dear Mr. Lieber:

The Office of the State Comptroller is committed to helping State agencies, public authorities, and local government agencies manage their resources efficiently and effectively. By so doing, it provides accountability for the tax dollars spent to support government operations. The Comptroller oversees the fiscal affairs of State agencies, public authorities, and local government agencies, as well as their compliance with relevant statutes and their observance of good business practices. This fiscal oversight is accomplished, in part, through our audits, which identify opportunities for improving operations. Audits can also identify strategies for reducing costs and strengthening controls that are intended to safeguard assets.

Following is a report of our audit of the Metropolitan Transportation Authority – MTA Bridges and Tunnels, MTA Bus Company, and MTA New York City Transit-Department of Buses – entitled *Risk Assessment and Implementation of Measures to Address Extreme Weather Conditions*. The audit was performed pursuant to the State Comptroller’s authority under Article X, Section 5 of the State Constitution and Section 2803 of the Public Authorities Law.

This audit’s results and recommendations are resources for you to use in effectively managing your operations and in meeting the expectations of taxpayers. If you have any questions about this report, please feel free to contact us.

Respectfully submitted,

*Division of State Government Accountability*

# Contents

---

- Glossary of Terms** ..... **6**
- Background**..... **7**
- Audit Findings and Recommendations**..... **9**
  - Risk Assessment..... **9**
  - Recommendation..... **10**
  - Capital Projects ..... **10**
  - Recommendations..... **12**
  - Inspections, Maintenance, and Training..... **13**
  - Recommendations..... **17**
  - Weather Notifications..... **17**
  - Recommendations..... **19**
- Audit Objectives, Scope, and Methodology** ..... **20**
- Statutory Requirements**..... **22**
  - Authority..... **22**
  - Reporting Requirements ..... **22**
- Agency Comments**..... **23**
- State Comptroller’s Comments**..... **40**
- Contributors to Report**..... **41**

# Glossary of Terms

---

<b>Term</b>	<b>Description</b>	<b>Identifier</b>
MTA	Metropolitan Transportation Authority	<i>Auditee</i>
B&T	Bridges & Tunnels	<i>MTA Agency</i>
BCC	Bus Command Center	<i>Key Term</i>
Blue Ribbon Commission	Blue Ribbon Commission on Sustainability and the MTA	<i>Key Term</i>
Bus Operations	Bus operating units of New York City Transit and MTA Bus Company	<i>Key Term</i>
C&D	Construction & Development	<i>MTA Agency</i>
CPSR	B&T's Capital Project Status Report	<i>Key Term</i>
MTA Bus	MTA Bus Company	<i>MTA Agency</i>
PM	Preventive maintenance	<i>Key Term</i>
PSR	Bus Operations' Project Status Report	<i>Key Term</i>
Transit	New York City Transit	<i>MTA Agency</i>

# Background

---

The Metropolitan Transportation Authority (MTA) is a public benefit corporation chartered by the New York State Legislature in 1965. MTA has six operating agencies: New York City Transit (Transit), MTA Bus Company (MTA Bus), Long Island Rail Road, Metro-North Railroad, Bridges and Tunnels (B&T), and Construction & Development (C&D). MTA Headquarters serves as the administrative arm of the agency.

B&T serves more than 900,000 vehicles on an average day. In 2019, it carried more than 329 million vehicles—more traffic than any bridge and tunnel authority in the nation. It operates seven bridges: Robert F. Kennedy, Throgs Neck, Verrazzano-Narrows, Bronx-Whitestone, Henry Hudson, Marine Parkway-Gil Hodges Memorial, and Cross Bay Veterans Memorial; and two tunnels: Hugh L. Carey Tunnel and the Queens-Midtown Tunnel.

MTA's bus operating units (Transit's Department of Buses [Transit Bus] and MTA Bus; hereafter collectively referred to as "Bus Operations") include 28 depots—20 operated by Transit Bus and eight by MTA Bus. The Bus Command Center (BCC), located in East New York, Brooklyn, is responsible for overseeing all of MTA's Bus Operations. Decisions are made at BCC that apply to both Transit Bus and MTA Bus. BCC reports to the Vice President of Bus Operations and ultimately to Transit's Senior Vice President – Buses, who also serves as the Senior Vice President of MTA Bus.

In September 2007, the Chair of the MTA appointed a Blue Ribbon Commission on Sustainability and the MTA (Blue Ribbon Commission), which was charged with making sustainability-related recommendations to MTA and its agencies. In April 2009, MTA issued the Blue Ribbon Commission's Final Report on Sustainability and the MTA, making recommendations in a number of key areas of sustainability planning. It sets apart 11 recommendations specifically related to climate adaptation to prepare for rising sea levels, storms, and severe weather events (one transformational that calls for the MTA to develop and implement a climate-adaptation decision-making matrix and 10 near-term recommendations, including having a climate change adaptation master plan). The report predicted that, without an adequate investment in adaptation measures, climate change will have even greater adverse impacts on MTA's vital infrastructure, operations, and revenue streams in the future. The chief risks to the metropolitan region and the MTA service area include more extreme precipitation events, coastal storms and storm surges, flooding, and, in the longer term, rising sea levels. A prior audit report on Transit, *Risk Assessment and Implementation of Measures to Address Extreme Weather Conditions* ([2021-S-27](#)), issued on September 29, 2023, discusses the Blue Ribbon Commission's recommendations in greater detail.

Superstorm Sandy hit the New York area on October 29, 2012, causing significant coastal flooding and approximately \$5 billion in damage to MTA assets. The Queens-Midtown Tunnel, a vehicular tunnel under the East River, filled with salt water. Although it reopened about 10 days later, repairs went on for years. Superstorm Sandy also took its toll on the bus system. While MTA prepared its buses for the storm by moving vehicles to higher ground, six bus depots in low-lying areas



---

flooded, including the Far Rockaway Depot, the 126th Street Depot, and the Michael J. Quill Depot on Manhattan's West Side.

The MTA network is considered an irreplaceable asset. MTA B&T has committed \$4.95 billion in capital program funding from 2010–2019 and has another \$3.33 billion in capital projects programmed for 2020–2024. MTA Bus has also committed \$673 million in capital program funding from 2010–2019 and has another \$871 million in capital projects programmed for 2020–2024. This includes the major restoration-resiliency projects stemming from Superstorm Sandy.

On December 17, 2012, the MTA Board approved an amendment to the 2010–2014 Capital Plan to add projects totaling \$4.755 billion for the repair and restoration of MTA agency assets damaged as a result of Superstorm Sandy, of which \$778 million is allocated for Sandy recovery projects for B&T. The MTA Board also approved an amendment in July 2013 that included an additional \$96 million allocation for mitigation initiatives at B&T. These mitigation measures are intended to help B&T better prepare for future storms and reduce service impacts, thereby preserving the long-term reliability of the B&T network.

The development of the Master Plan (planned elements of the project, along with estimated budgets and, in some cases, schedules) serves as a tool for decision-making and consensus-building. Key strategic issues are identified and resolved as a result of the analysis performed during the Master Plan's development. Project Management Procedures require that a budget estimate be prepared in the "year dollars" of the Master Plan document (i.e., an estimate as if the project were to be awarded immediately). Escalation to the year of award is handled when a project enters a future capital program.

B&T and Bus Operations use a project status report system to track key project metrics. The report includes the project number, name, and description. It also identifies the contractor, the project CEO, the program, construction and project managers, information on component tasks, the budget, payments to date, estimated costs at completion, key dates, the phase of completion, and monthly progress. At B&T, it is called a Capital Project Status Report (CPSR), while at Bus Operations, it is called a Project Status Report (PSR). The timeline and budget data of the project are entered and updated monthly for the duration of the project.

Inspection and maintenance of B&T and Bus Operations equipment is critical for ensuring the system is prepared for future extreme weather events. Consequently, both B&T and Bus Operations are required to conduct inspections of their storm equipment and vehicles periodically (ranging from weekly to annually). Preventive maintenance (PM) is performed to detect or prevent the degradation of vehicles and equipment in order to sustain or extend their useful life.

In addition, both B&T and Bus Operations have developed several weather plans/procedures that can be activated for extreme weather-related conditions and detailed procedures to be followed leading up to a storm event and following its impact.

# Audit Findings and Recommendations

---

B&T and Bus Operations did not perform a systemwide risk assessment to identify the potential for damage to their transportation systems. However, both have developed and carried out projects to mitigate the effects of coastal storms and related flooding, largely in the wake of Superstorm Sandy.

For three of the six B&T projects we reviewed, the amount expended exceeded the contract award amount on the CPSR, and three were behind schedule. For the three projects we reviewed at Bus Operations' facilities, the amount expended for two exceeded the contract award amount on the PSR, and all three projects were not completed on time. Projects that are completed later than planned may not be able to meet the needs for which they were designed.

Inspections, PM, and corrective maintenance tasks were not completed as required or were not documented for flood mitigation equipment. Additionally, we found that issues reflected in inspection reports, such as cracks in crash barriers for a portal flood gate, were not corrected promptly, and subsequent inspection reports indicated worsening damage over time.

Vehicle inspections were either not sufficiently documented or were not conducted in accordance with Bus Operations' Winter Operations Plan requirements. For example, at four depots, we found that only 59 of 336 weekly/monthly inspections of snow fighter equipment were documented. In addition, at B&T, 176 PM work orders for 38 vehicles were completed but the staff did not check off listed tasks to denote which were completed, nor did they make note of any issues found when performing the tasks.

## Risk Assessment

In September 2007, the Chair of the MTA appointed a Blue Ribbon Commission on Sustainability and the MTA (Blue Ribbon Commission) charged with making sustainability-related recommendations to MTA and its agencies. In April 2009, MTA issued the Blue Ribbon Commission's Final Report on Sustainability and the MTA, making recommendations in a number of key areas of sustainability planning. It sets apart 11 recommendations specifically related to climate adaptation to prepare for rising sea levels, storms, and severe weather events (one transformational that calls for MTA to develop and implement a climate-adaptation decision-making matrix and 10 near-term recommendations, including having a climate change adaptation master plan). The report predicted that, without an adequate investment in adaptation measures, climate change will have even greater adverse impacts on MTA's vital infrastructure, operations, and revenue streams in the future. The chief risks to the metropolitan region and the MTA service area include more extreme precipitation events, coastal storms and storm surges, flooding, and, in the longer term, rising sea levels. A prior audit report of Transit, *Risk Assessment and Implementation of Measures to Address Extreme Weather Conditions* ([2021-S-27](#)), issued on September 29, 2023, discusses the Blue Ribbon Commission's recommendations in greater detail.

---

The MTA network is considered an irreplaceable asset. To determine if B&T and Bus Operations have taken steps to protect their part of the network, we inquired as to whether they had conducted a systemwide risk assessment. B&T officials said they didn't see a risk, so there was no plan to do an assessment in the near future. However, some individual assessments were performed, along with work to mitigate the effects of extreme weather events at a few facilities.

MTA Bus officials did not provide a systemwide assessment of their bus depots. C&D officials indicated some risk review was done regarding four depots, and we were shown a map of coastal flooding areas and bus facilities, but no written evaluation was provided. The Master Plan for the four depots indicated they were selected due to past flooding and the need to provide bus service in the event of damage to its transportation system. In addition, as stated in our prior audit report ([2021-S-27](#)), Transit Bus did not conduct a systemwide risk assessment to identify the potential damage to its transportation system.

In response to our preliminary findings, officials responded that C&D is responsible for conducting an MTA-wide risk assessment. On April 25, 2024, MTA issued its Climate Resilience Roadmap, referring to it as the response to the growing recognition that climate change poses a threat to the future of the transit system. It is the first report issued by MTA's new climate planning division, formed in 2023, to coordinate MTA's response to the climate crisis. The report represents a deep dive into understanding the remaining vulnerabilities from all climate hazards. The projects will include work to protect subways, maintenance yards, bus depots, and commuter rail lines from floods; shield bridges from high winds; and mitigate the dangers of extreme heat to the infrastructure. MTA anticipates these projects to cost about \$6 billion over the next 10 years.

Extreme winter storms and weather events could impact the transportation system if a risk assessment is not performed to identify weaknesses.

## Recommendation

1. Periodically update the systemwide assessment, document progress made, and report on any new conditions requiring mitigation.

## Capital Projects

### Contract Award Amount/Substantial Completion

B&T and Bus Operations use a project status report system to track key project metrics. The report includes the project number, name, and description, and identifies the contractor, the project CEO, the program, construction and project managers, information on component tasks, the budget, payments to date, estimated costs at completion, key dates, the phase of completion, and monthly progress. At B&T, it is called a Capital Project Status Report (CPSR), while at Bus Operations, it is called a Project Status Report (PSR). The timeline and budget data of the project are entered and updated monthly for the duration of the project.

---

We reviewed nine capital projects (six projects at B&T and three projects for Bus Operations [bus depots]). We compared the amount expended to the contract award amount and found:

- Five projects (three B&T and two Bus Operations) spent more than the contract award amount when compared to the CPSR/PSR, ranging from \$26,558 to \$1.6 million over the contract award amount.
- One project was within contract award amount.
- Three projects were under the contract award amount.

For the same nine capital projects, we reviewed whether the project met the substantial completion<sup>2</sup> time frame and found:

- Six were behind schedule, ranging from 1 to 6 months.
- Two were completed on schedule.
- One was ahead of schedule.

Expending more than the contract award amount may take away funds from other projects, while projects completed later than planned may not be able to meet the needs for which they were designed.

## Master Plan Variances

The Master Plan lists all the planned elements of the project, along with estimated budgets and, in some cases, schedules. We reviewed a sample of six projects and found the variances from the Master Plan—the proposal that precedes the design stage—for these projects were significant when compared to the project status reports.

For one B&T project, the Master Plan showed \$7.3 million allocated to “Raising of revenue control equipment at the Queens-Midtown Tunnel Service Building above the 500-year flood elevation.” The documents showed that a contract was awarded for \$3.2 million, including \$12,509 for an E-ZPass room. However, the final cost for the E-ZPass room was \$78,509—a more than 600% increase of the budgeted cost. Despite the significant gap between the planned and actual spending on this, total costs for the Queens-Midtown Tunnel Service Building project were still far below the amount in the Master Plan. B&T officials advised us that other projects were added after surplus Sandy program funds became available through savings and efficiencies realized in the original projects. Although B&T officials said they had a procedure that allows them to spend surplus funds on other projects, they have not provided it.

Another project was for Sandy mitigation work at four bus depots. Three bus depots involved a combination of different flood mitigation items, as well as perimeter

---

<sup>2</sup> Substantial completion refers to a stage of construction where the construction manager determines that all contract work has been completed and it is acceptable to be placed in service, and all deliverables necessary to safely maintain all operating systems and equipment have been received, reviewed, and found acceptable.

---

protection and backflow preventers.<sup>3</sup> The PSR for the three depots indicated an estimate at completion for the entire project (including contract costs and force account work) of \$21.5 million. A fourth depot was awarded separately, with a completed cost of \$1.5 million. The Master Plan for this project, including all four depots, had an estimated cost of \$59.7 million. However, the \$59.7 million Master Plan amount is more than double the construction cost of \$23 million (\$21.5 million + \$1.5 million). Further, for the three depots mentioned above, the construction contract was awarded a lump sum price of \$15.3 million. The vouchered amount indicated that the construction work had cost \$16.4 million, or \$1.1 million more than the award amount, and was expected to close out in the amount of \$17.6 million—an increase of \$2.4 million and 14 months later than originally scheduled.

Another project was to repair the damage caused by Superstorm Sandy at the Far Rockaway Depot. The Master Plan stated that the estimated time frame for completion of all tasks was 12 months with a cost estimate of \$20.7 million. However, per the PSR, the construction started in August 2016 and was completed in November 2018 (27.5 months later) at a total cost of \$9.9 million.

When asked about the variation between the Master Plan and the PSR, the project manager told us that the Master Plan contains MTA's initial estimates; therefore, projects will not always be completed within the time frame or amount stated in the Master Plan. In addition, the budget and schedule in the Master Plans are only estimations for budgeting purposes, and they always plan for a higher budget on the Master Plan. Due to unforeseen issues at the worksite, change orders can be issued, which can cause the project to be delayed and may add cost. C&D officials stated that additional work orders are an inevitable part of the work in the field as well as other business decisions, and that they negotiated against an agency-prepared estimate of the additional/deleted work.

However, when delays occur on a flooding mitigation project, assets may be exposed to vulnerabilities until completion is achieved.

## Recommendations

2. Monitor projects to ensure costs do not markedly exceed the contract award amount.
3. Ensure that the Master Plans are prepared in a manner that is useful to address conditions they cover, and cost estimates are escalated, as appropriate.

---

<sup>3</sup> Backflow preventers are special devices used to prevent an undesired reverse flow of wastewater chemicals from entering through a floor drain. When open, they permit drainage; when backflow occurs, they close to keep the wastewater from returning to the building.

---

**To B&T:**

4. Ensure documentation provides sufficient detail and insight to explain how a decision to add additional work was reached, rather than simply indicating the outcome.

## **Inspections, Maintenance, and Training**

B&T and Bus Operations have different types of flood response, mitigation, or prevention items in place to protect their transportation systems. B&T uses a contractor to inspect and maintain its mitigation equipment and deploy the equipment in the event flooding is expected. According to the contract, the contractor must conduct one annual test deployment as well as deployments for major storms, and bimonthly inspection and maintenance of deployable flood mitigation measures. Bus Operations perform their own inspections and have established time frames and tasks to inspect and test equipment at the bus depots.

### **B&T Equipment Maintenance and Inspection**

To determine whether B&T was in compliance with equipment maintenance and inspection requirements, we sampled eight of the 31 items included in B&T's *Flood Response, Mitigations and Prevention Items Contained in Capital Programs* listing, such as portal flood gates and flood-proof doors. These eight items, located at four different facilities, had 24 pieces of equipment that we checked for inspections.

We visited two B&T tunnel facilities, which had 12 flood doors, and found that no inspections of the doors were completed. For example, each door is sealed with gasket seals (material, such as rubber or a part such as an O-ring, used to make a joint fluid-tight) that help prevent water leakage from gaps around the door. A broken gasket seal can leave the area susceptible to flooding when the door is being used for that purpose. We were told that the dried-out condition of gaskets on the doors would be detected by the daily use of the doors. However, we found that three of the 12 doors had broken gasket seals.

We also reviewed the bimonthly inspection records for nine pieces of equipment, including four portal flood gates, from 2020 to 2022. There was no documentation to support that two of the required 119 inspections were performed. In response to our preliminary findings, B&T officials disagreed but did not provide any additional inspection reports. In addition, we found that issues noted in the inspection records were not repaired or resolved in a timely manner. For example, minor cracks in crash barriers for a portal flood gate identified on the March 2020 inspection report were not repaired as of September 2022 (30 months later). Further, the conditions worsened over time. As of September 2022, the inspection report stated the barrier was misaligned, threaded rods were damaged, and there were also missing threaded rods, nuts, and plates. In response to our preliminary findings, B&T officials stated that minor cracks had no effect on the barriers' intended function; therefore, there was no need to repair them. They included an engineering evaluation of the cracks as supporting documentation. However, B&T officials did not have a record

---

to show they acted when the contractor pointed out in an inspection report that there was a need to repair part of the flood gate. If B&T concluded that no repair was needed, it should have annotated it in the contractor's report when it was submitted instead of waiting until our auditors brought it to B&T's attention. Additionally, a tarp protecting a barrier used to prevent flooding was reported damaged in November 2020; however, it was not replaced until November 2021. The three remaining pieces of equipment are not subject to inspections.

In addition to the 24 pieces of equipment that we checked for inspections, we found that window flood panels were not inspected on a bimonthly schedule as required in 2020, 2021, and 2022 other than one inspection in 2022. The contractor told us they were not able to open the gate for the storage location. However, B&T stated that the contractor had the key to the storage location—right from the beginning. Although the window flood panels were not inspected, the contractor's report indicated that all window flood panels were stored in the proper location.

Logs are used to record the test run of the generators at B&T bridge facilities. We found the logs used at two of the bridges were not intended to be used at those specific bridges. For example, in addition to crossing out the bridge's name on the log to indicate the actual bridge, we noted that the logs for each bridge did not record the same information.

Overall, our observations indicate that B&T needs to improve its monitoring of the inspections and maintenance. It did not verify work performed by contractors. Regular and timely inspections and maintenance could detect mechanical problems or other issues that could be fixed timely, or their deployment may not be as effective in the event of impending weather conditions, leaving B&T's infrastructure at risk.

## **B&T Vehicle Preventive Maintenance**

We reviewed work orders for 38 vehicles (for a total of 176 work orders) completed at four B&T facilities. Although the work orders list tasks, the staff did not check off which tasks were completed or make note of any issues found when performing the tasks. We also found work orders regarding corrective maintenance actions that did not state what was performed on the vehicle for PMs and the comments varied on the work orders—some are detailed, and others are not. For example, one work order indicated "vehicle loader GEHL loader 6M PMI visual inspection onsite PMI" and another work order indicated "Checked as per recall. All is good." Therefore, it is not clear if the required maintenance was completed.

Additionally, we found that some of the work orders were canceled or were incomplete. From January 2021 to May 2023, PMs were canceled for five of the vehicles in our sample due to staff shortages. From a sample of 312 work orders for preventive and corrective maintenance (including the 176 work orders mentioned above), we did not receive evidence that 19 work orders were completed for three equipment items.

---

## B&T Vehicle Mileage

We reviewed the vehicle mileage records to determine if PMs were completed at the appropriate time for the 38 vehicles. The maintenance task requirements for the 38 vehicles are as follows:

- Every 6 months or 12,000 miles or 1,200 hours:
  - Perform safety inspection
  - Chassis and body lubrication
  - Change motor oil and oil filter, air, fuel, hydraulic, transmission, and coolant filters
  - Replace diesel crankcase breather filter and cabin filter
- Every 12 months or 24,000 miles or 2,400 hours:
  - Same tasks as above
  - Replace cabin filter

However, we found that B&T staff did not monitor the vehicles' mileage at the time of the PMs. Further, they did not monitor whether the mileage entered was consistent with the previously documented mileage on the work order.

We reviewed the vehicle mileage for 33 of the 38 vehicles at three locations for the years 2021, 2022, and 2023 (through mid-June). Readings for five vehicles were not provided. We found the mileage for six of the 33 vehicles was not reasonable because the mileage did not increase with each reading over time. For example, the mileage for one vehicle was recorded at 35,865 on January 28, 2021, but on February 11, 2021—less than 2 weeks later—it was recorded as 216. For another vehicle, from January 27, 2021 to February 21, 2021, the mileage was recorded as 86, 82, 999, and then 172.

B&T officials stated that they have been doing this work for a very long time and they just know what to do and if it has been performed. Officials also stated they rely on the knowledge of and assurance from the maintainers to complete each of the items on the checklist for PM. However, without accurately documented mileage, there is less assurance that PMs are being completed at the appropriate time.

When a PM is not performed or is skipped, there is a risk that the equipment will not work as required during adverse weather conditions.

## Bus Operations Inspections

It is critical to protect bus depots that are vulnerable to flooding in order to secure the assets these facilities contain and ensure that bus service is not disrupted. The bus network provides a necessary element of modal redundancy to the Transit system and, for this reason, is essential to operations during an emergency flooding event. As such, there are established time frames and tasks to inspect and test equipment at the bus depots. Further, the Winter Operations Plan has weekly/monthly requirements for inspection.



---

To determine whether bus depots were in compliance with equipment maintenance and inspection policies, we selected a judgmental sample of six of the 28 bus depots. The six depots we visited reported a total of 184 pieces of equipment, such as snow fighters, payloaders, and flood logs. The depot personnel showed us 183 pieces of equipment and indicated one piece was loaned to another depot. They provided the related inspection records for these 183 items. Our review of the records revealed that there was no documentation to support inspections, as follows:

- For inspections of four snow fighters, a total of 336 weekly/monthly inspections were required by the Winter Operations Plan. However, only 59 of 336 weekly/monthly inspections (18%) were documented at four depots for the period from November 1, 2021 through April 30, 2023. This may be due, in part, to no clear consistency in complying with the inspection requirement the snow fighters follow because some depots follow the inspection requirements in the Winter Operations Plan, while others follow only an annual service operation inspection. Inspections that are not performed in accordance with the requirements in the weather plans may result in the equipment not operating when needed.
- For two trailer diesel pumps, we found that six of 15 semi-annual inspections were not documented at two depots.
- For two owned payloaders, we reviewed the four pre-season checklists for 2021 and 2022. Two of the four checklists were not provided, and for a third checklist (2021), the wrong form was used. The remaining checklist was completed as required. Additionally, there was no policy for inspecting payloaders.
- For one of the three depots (which had flood mitigation equipment), the inspection documents for 2022 did not cover all the mitigation equipment. Of the 107 pieces of equipment in the inventory, 95 (89%) were not listed on the inspection form.

Equipment may not operate when required if inspections are not performed according to established time frames and tasks to complete inspections and test equipment are not performed.

## Bus Operations Training

We reviewed the training records at three bus depots and found that there were no records to support that employees at two of the three depots were trained to inspect the flood mitigation equipment. In addition, at all three depots, there was no support that the employees were trained to perform seven of the nine trailer diesel pump inspections. We were told that sufficient training was not provided for the trailer diesel pumps due to staff shortages.

Without proper training, equipment may not be inspected properly, and it may increase the risk of the equipment not working as intended when required.

---

## Recommendations

5. Maintain and inspect equipment regularly and in a timely manner as required.
6. Ensure equipment is inspected in accordance with the Winter Operations Plan to efficiently mitigate adverse weather conditions.

### To Bus Operations:

7. Ensure depot personnel are trained to test, maintain, and inspect all flood mitigation equipment.
8. Clarify in the Bus Winter Operations Plan the responsibility for performing weekly/monthly inspections of snow fighter equipment. Update the Winter Operations Plan to include the policy for inspecting payloaders and include a sample pre-season inspection form.

### To B&T:

9. Ensure repairs are performed promptly after each inspection.
10. Improve the vehicle PM by:
  - Ensuring that each is done timely.
  - Indicating all the PM tasks that are completed on each work order.
  - Ensuring mileage is recorded and accurate for each vehicle for use in determining required maintenance.
11. Ensure that the correct form is used for each facility to clearly document the equipment being inspected/tested and that forms are filled out entirely.

## Weather Notifications

Both B&T and Bus Operations have developed several weather plans/procedures that can be activated for extreme weather-related conditions and detailed procedures to be followed leading up to a storm event and following its impact.

To determine whether B&T and Bus Operations were in compliance with their plans and procedures, we selected 10 extreme weather dates (e.g., high winds) for B&T and Bus Operations for review. We reviewed documentation used to receive daily weather information and prepare for events along with the plans that guide the agencies for these events. We determined that both B&T and Bus Operations were not always in compliance.

### B&T

B&T's Hurricane/Severe Storm Preparedness and Recovery Procedure requires that a Hurricane or Severe Storm Checklist (checklist) be completed for extreme weather-related conditions. In addition, B&T requires that a Facility Log be maintained for each weather event. At B&T, we did not receive one of the 10 checklists. B&T also did not have Facility Logs for each weather event and could not locate them for six events. B&T officials indicated that Facility Logs are currently only

---

used for winter storm events, and for the six events where they did not have Facility Logs, the weather events were related to rain and/or high wind. We recommended B&T implement Facility Logs for all severe weather events—not only for the winter weather events. At our closing conference, B&T officials were receptive to using an amended Facility Log that would be applicable to the other severe weather events.

B&T officials also do not retain copies of records for each weather event after the event occurs. Because documents are not collated and/or filed, there is a risk that actions taken during the weather event cannot be supported.

## Bus Operations

Bus Operations' Winter Operations Plan requires that a Storm Control Coordinator be designated for each borough. Storm Control Coordinators are responsible for coordinating all winter storm control activities and reporting back to the designated BCC Coordinator. In addition, the Assistant General Manager of Transit ensures there is an adequate supply of snow-fighting equipment and supplies are ordered and received from storerooms before the winter season arrives. An advisory will be issued 12 hours prior to the anticipated event to warn all Bus Operations locations of the impending storm and the possibility of proceeding to a storm alert status. Transit's Vice President of Operations declares all alerts except for a Red Alert, which only Transit's President or Senior Vice President can declare. The Winter Operations Plan states the conditions for each alert. For example, a "Yellow Alert should be called when a storm of one or more inches of precipitation or other hazardous condition is forecast by weather reporting services to start within four hours." The BCC Manager should also send a text message to the electronic device of all members of the Weather Alerts Group, notifying them of the alert status.

Bus Operations officials provided a Daily Weather Synopsis (i.e., weather report) for the 10 extreme weather dates in our sample. They stated that three of the 10 dates did not reach "declaring the alert" stage in the weather plans. However, one of these dates included Tropical Storm Fay (July 10, 2020), which was a weather event in the area. According to the National Oceanic and Atmospheric Administration, Tropical Storm Fay became a remnant low-pressure area with winds below gale force over southeastern New York early on July 11, 2020. John F. Kennedy International Airport recorded 2.31 inches of rain at 1 a.m. on the same date. In their response to our preliminary findings, officials stated that they could not find anything in their email about the weather—including Tropical Storm Fay—for all three dates. They said that means that the weather wasn't adverse, so they only gave us the Daily Weather Synopsis to show a summary of the weather for these days.

Two of the remaining seven extreme weather dates—August 21, 2021 and September 1, 2021—caused bus depot flooding. There was no indication of any actions (e.g., alerts) being taken to mitigate the affected depots. In response to our preliminary findings, Bus Operations officials acknowledged this and stated they have already ensured these alerts will be issued. According to the email correspondence from BCC, depots are to pay special attention to flash flooding; however, the Hurricane Plan does not include this area. Additionally, the vendor that

---

forecasts weather highlighted flash-freezing weather conditions on December 24, 2022; however, procedures to mitigate this type of condition at the depots are not mentioned in the Winter Operations Plan.

Moreover, in prior years, when the weather forecast issued a tornado warning and flash-freezing warning, Bus Operations had no weather plan that included a procedure for addressing this. Bus Operations officials should update their manuals to include these unusual weather conditions. Bus Operations infrastructure may be at risk if it is not prepared for all extreme weather events.

## Recommendations

### To B&T:

12. Ensure that appropriate documentation is prepared and maintained for each weather event. Implement the Facility Log system for all weather events—not only for winter events.

### To Bus Operations:

13. Ensure that:
  - Decisions made throughout an entire weather event are documented.
  - The appropriate level of alert is issued when the weather condition is forecasted.
  - Plans are in place for unusual weather conditions such as tornadoes, flash flooding, and flash freezing.

# Audit Objectives, Scope, and Methodology

---

The objectives of our audit were to determine whether MTA—B&T, MTA Bus, and Transit Bus—identified the potential damage to its transportation systems and developed plans to mitigate the effect of extreme weather conditions and flooding; and whether the plans were tested/updated and the weather-related equipment was inspected/maintained to ensure it can be deployed when needed. The audit covered the period from April 2009 through July 2023.

To accomplish our objectives and assess the relevant internal controls, we reviewed agency procedures and guidelines. We interviewed officials and employees to obtain an understanding of the capital project process; equipment inspection, maintenance, and testing; and preparation for extreme weather. In addition, we reviewed records for each of our samples. This included training records to determine if the employees were qualified to inspect the equipment. We also tested the data used to select our samples, and determined it was sufficiently reliable for the purpose of our audit objectives. These samples were not designed to be projected to the entire population.

We used a non-statistical sampling approach to provide conclusions on our audit objectives and to test internal controls and compliance. We selected judgmental samples. However, because we used a non-statistical sampling approach for our tests, we cannot project the results to the respective populations. Our samples include:

- A judgmental sample of six of 30 B&T capital projects (based on status and dollar amount) and all three Transit Bus and MTA Bus capital projects to determine whether MTA identified the potential damage to its system and developed plans to mitigate the effect of extreme weather conditions and flooding. We also reviewed the three Master Plans for the six projects.
- Two samples to determine if B&T tested the equipment to ensure it will work when needed and that B&T is prepared to implement it:
  - A judgmental sample of eight of 31 items (based on type and facility) on B&T's *Flood Response, Mitigations and Prevention Items Contained in Capital Programs* listing for 24 pieces of equipment.
  - A judgmental sample of 40 pieces of equipment, at three of 13 facilities (based on type and location), on B&T's Fleet Inventory Snow Equipment listing of 115 pieces of equipment and work orders.
- A judgmental sample of six of 28 bus depots (based on location and division) from Transit's Department of Buses Facilities listing to determine if the selected depots were in compliance with the equipment maintenance and inspection policies in preparation for rain and snow events.
- A judgmental sample of 10 dates from July 2020 through May 2022 for B&T and July 2020 through April 2023 for Bus Operations were selected (based on a variation of weather events such as hurricane, tropical storm, flooding/heavy rain, and heavy rain and high winds) to determine if the weather plans were tested/updated and followed in the event of a storm.

---

We relied on data from the National Oceanic and Atmospheric Administration (NOAA), which is part of the U.S. Department of Commerce, and used this data to identify significant weather events. NOAA, as part of its mission, creates and disseminates reliable assessments and predictions of weather. This data is subject to NOAA's quality assurance process and is thus sufficiently reliable for the purposes of this report without requiring additional testing.

# Statutory Requirements

---

## Authority

This audit was performed pursuant to the State Comptroller’s authority under Article X, Section 5 of the State Constitution and Section 2803 of the Public Authorities Law.

We conducted our performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

In addition to being the State Auditor, the Comptroller performs certain other constitutionally and statutorily mandated duties as the chief fiscal officer of New York State, including some duties on behalf of public authorities. For MTA, these include reporting MTA as a discrete component unit in the State’s financial statements and approving selected contracts. These duties could be considered management functions for purposes of evaluating organizational independence under generally accepted government auditing standards. In our professional judgment, these duties do not affect our ability to conduct this independent audit of MTA’s risk assessment and implementation of measures to address extreme weather conditions.

## Reporting Requirements

We provided a draft copy of this report to MTA officials for their review and comment. Their comments were considered in preparing this final report and are attached in their entirety at the end of it. In their response, MTA officials stated they “acknowledge” nine of the 13 recommendations—a designation that they use to indicate they were aware of the condition before the audit report and have taken action to address it. They agreed with two recommendations; for the remaining two, officials agree with and/or acknowledge parts of the recommendation.

Within 180 days after the final release of this report, as required by Section 170 of the Executive Law, the Chair and Chief Executive Officer of the Metropolitan Transportation Authority shall report to the Governor, the State Comptroller, and the leaders of the Legislature and fiscal committees advising what steps were taken to implement the recommendations contained herein, and where the recommendations were not implemented, the reasons why.

# Agency Comments

---

2 Broadway  
New York, NY 10004  
212 878-7000 Tel

**Janno Lieber**  
Chairman and Chief Executive Officer



September 26, 2024

**VIA E-MAIL**

Ms. Carmen Maldonado  
Audit Director  
The Office of the State Comptroller  
Division of State Government Accountability  
59 Maiden Lane, 21<sup>st</sup> Floor  
New York, NY 10038

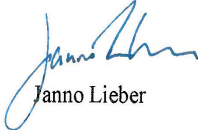
**Re: Draft Report #2023-S-4 (Risk Assessment and Implementation of Measures to Address Extreme Weather Conditions)**

Dear Ms. Maldonado:

This is in reply to your letter requesting a response to the above-referenced draft report.

I have attached for your information the comments of Catherine Sheridan, President, MTA Bridges & Tunnels; Demetrius Crichlow, Interim President, New York City Transit; and Jamie Torres-Springer, President, MTA Construction & Development, which address this report.

Sincerely,



Janno Lieber

c: Laura Wiles, MTA Chief of Staff  
Monica Murray, Auditor General, MTA Audit Services

*The agencies of the MTA*  
MTA New York City Transit  
MTA Long Island Rail Road

MTA Metro-North Railroad  
MTA Bridges and Tunnels

MTA Construction & Development  
MTA Bus Company



---

2 Broadway  
New York, NY 10004  
212 878-7000 Tel



September 23, 2024

**VIA ELECTRONIC MAIL**

Mr. Janno Lieber  
Chair and Chief Executive Officer  
Metropolitan Transportation Authority  
2 Broadway, 20<sup>th</sup> Floor  
New York, New York 10004

**Re: MTA Response to the Office of the New York State Comptroller Audit Report 2023-S-4 - Risk Assessment and Implementation of Measures to Address Extreme Weather Conditions (MTA Bridges & Tunnels, MTA Bus Company, and New York City Transit - Department of Buses)**

Dear Chair Lieber:

Thank you for providing us with an opportunity to respond to the Office of the New York State Comptroller's ("OSC") subject Draft Report, issued August 20, 2024, regarding implementation measures to address extreme weather conditions relevant to MTA Bridges and Tunnels, MTA Bus Company, and New York City Transit Department of Buses (the "Report").<sup>1</sup>

As an initial matter, we wish to highlight the significant strides the MTA has taken over the past two decades to enhance its emergency preparedness and response capabilities and implement well-informed strategies to proactively mitigate the potential damage to its assets and systems from future extreme-weather events, including but not limited to those caused by climate change. During this time, the MTA significantly strengthened its internal bench of dedicated emergency preparedness resources not only at MTA Headquarters but also within and across the various operating agencies. These professionals have been partnering for many years with New York City Emergency Management ("NYCEM") as well as other regional and government partners (e.g., New York State's Division of Homeland Security and Emergency Services, Amtrak, United States Transportation Command) in active working groups dedicated to emergency management, business continuity, and resiliency planning.

---

<sup>1</sup> The response to this Report is being submitted jointly by Triborough Bridge and Tunnel Authority ("MTA B&T"), MTA Bus Company ("MTA Bus"), New York City Transit Authority - Department of Buses ("NYCT-DOB"), and MTA Construction & Development Company ("MTA C&D"), otherwise herein referred to as the "MTA Agencies."

*The agencies of the MTA*

MTA New York City Transit  
MTA Long Island Rail Road

MTA Metro-North Railroad  
MTA Bridges and Tunnels

MTA Construction & Development  
MTA Bus Company

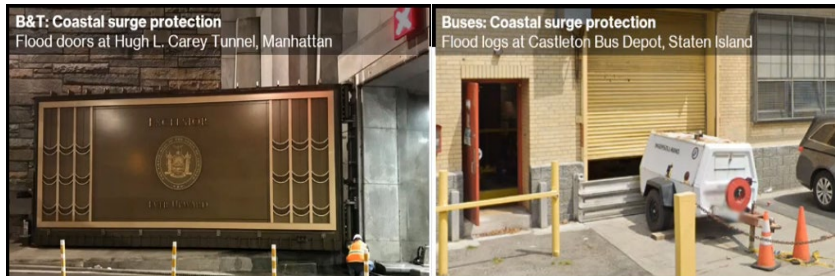
Even prior to Superstorm Sandy, the MTA had already made substantial investments to proactively harden its system to extreme weather events and had been consistently updating its emergency plans and preparedness activities based on the most current information available at that time.

After Superstorm Sandy, at the Authority-level, noteworthy accomplishments include the buildout of an activation-ready Situation Room at MTA Headquarters to support Authority executives in effectively managing multi-agency emergency events; publication of an MTA-wide Coastal Storm Plan; and implementation of nearly \$8B in capital improvements for flood resilience such as the installation of over 3,000 flood protection devices at 31 stations; rehabilitation of 11 under-river tunnels; construction of flood walls around multiple yards as well as numerous bridges, signals, substations, hardening of critical facilities, and elevating of critical equipment.

At MTA B&T, extensive resiliency work was performed to the Queens Midtown Tunnel, Hugh L. Carey Tunnel, Cross Bay Bridge, and Marine Parkway Bridge.

- At both tunnels, eight flood doors (each weighing more than 20 tons) were installed at the tunnel entrances along with new walls and reinforcement of the existing walls.
- For the Cross Bay and Marine Parkway bridges, electrical equipment and substations were replaced and elevated.

Additional restoration efforts also took place across B&T facilities to rebuild stronger, more resilient infrastructure (e.g., the seawall around Governors Island Ventilation Building was reconstructed to be 13 feet higher).



For MTA Bus/NYCT-DOB, resiliency improvements included installation of removable flood panels at four bus locations and a customized flood roller gate at the Michael J. Quill bus depot.

It is also important to note that, at this time, all of the Sandy Restoration and Mitigation Projects that were committed to for MTA B&T and MTA Bus/NYCT-DOB as of July 2013 are now complete. Furthermore, due to efficient packaging and execution of contracts, the total MTA B&T Sandy Program budget decreased over time from \$873.5 million (June 2013) to \$765.1 million (September 2019), even as additional projects were being added. In Spring 2023, the

budget envelope for the MTA B&T Sandy Capital Program was even further reduced to \$700.3 million. For Buses-related projects, the Sandy portion of 2010-2014 Capital Plan initially included \$75M (\$59.7M for NYCT Buses and \$15M for MTA Bus). The most recent Plan Amendment decreased the original budget to \$43M (\$32M for NYCT Buses and \$11M for MTA Bus).

That being said, the MTA Agencies respond to the Report as follows:

### **MTA RESPONSE TO OSC FINDINGS**

The Report focuses on five key findings.

#### **Key Finding No. 1**

B&T and Bus Operations did not conduct a systemwide risk assessment to identify the potential damage to their transportation systems. However, both have developed and carried out projects to mitigate the effects of coastal storms and related flooding, largely in the wake of Superstorm Sandy.

#### **MTA Response to Key Finding No. 1**

The MTA Agencies **disagree** with this finding.

[Comment 1](#)

As noted in the Report, in 2023 MTA C&D's Climate Planning Division conducted a systemwide multi-hazard climate vulnerability assessment to understand the magnitude and timing of climate-change impacts on MTA infrastructure. This assessment drew upon multiple data sets to forecast rising regional climate threats including but not limited to coastal surge, sea-level rise, torrential rain, and extreme heat. In April 2024, the findings from this assessment were published in a "Climate Resilience Roadmap."

Furthermore, as detailed extensively within our response to a prior OSC Audit ([2021-S-27](#)), the MTA Agencies have been analyzing their asset and infrastructure vulnerabilities and updating their respective emergency-preparedness plans and capital investments to adapt to evolving weather-related threats for decades. Even before Superstorm Sandy, MTA B&T had awarded Project AW-98 to evaluate risks and potential mitigation measures for the Queens Midtown Tunnel and Hugh L. Carey Tunnel and NYCT engineers had reevaluated the height of storm surge at various facilities, which resulted in the recalculation of tunnel flooding maps and updates to layup plans for various assets.

#### **Key Finding No. 2**

Of the nine capital projects that we reviewed (six at B&T and three for Bus Operations [bus depots]), we found that the amount expended exceeded the original contract award amount for five projects, was lower for three projects, and was within the contract award amount for one project. For the same nine projects, substantial completion was late for six projects (from 1 to 6 months), on schedule for two projects, and ahead of schedule for one project.

MTA Response to Key Finding No. 2

While we agree with the OSC’s decision to not draw conclusions pertinent to capital project management by using historical Master Plans as a metric (i.e., because the details laid out in those initial plans, by design, would have been limited to preliminary cost and schedule information), we note that the alternative methodology employed (i.e., comparing each project’s contracted amount and target duration at the time of award with the final amount expended by the contractor and date of substantial completion) still fails to take into consideration approved contract amendments and the reasoning behind their execution. This is extremely relevant context. For example, in one instance, a contract amendment that advanced substantial completion by less than two months directly contributed to \$72,000 in savings. In addition, it neglects to capture the fact that all nine of the audited projects were completed in accordance with approved contractual amendments.

[Comment 2](#)

It also is worth noting that all the audited Sandy projects were initiated prior to December 2019. Prior to the creation of MTA C&D, management of the capital program resided within each of the operating agencies, with each agency independently managing the portion of the program that impacted its own operations. Post-transformation, MTA C&D became the sole agency responsible for the planning, development, and delivery of the entire MTA Capital Program. This transformation occurred at a time when most infrastructure and construction projects were coming to a grinding halt due to the pandemic. Despite this, MTA C&D immediately began to modernize its management of the MTA’s capital program. For example, it doubled down on containing costs by implementing cost-saving measures such as upfront scoping and value engineering, enhanced oversight of force-account costs, and dedicated efforts to increase competition for contract awards. It also accelerated project delivery by strategically bundling work, utilizing a greater variety of project-delivery methods, incorporating new technologies, and expanding the use of “A+B” bidding to incentivize schedule reductions.

[Comment 3](#)

These changes have resulted in a stronger, more effective capital program, and MTA C&D’s track record supports these results. In 2023, the MTA awarded more than \$8 billion in new commitments, with those awards coming in 6.2% below the engineer’s estimate, saving nearly \$300 million. Since 2020, bids from third-party contractors have come in, on average, 6% below our estimates, resulting in an overall bid savings of \$890 million. Since 2021, MTA C&D also has reduced project schedules by an average of 4 months on new contract awards, compared with the engineer’s estimate. In 2023, the completion of multiple major projects evidenced the heart of C&D’s mission to deliver projects better, faster, and cheaper, including but not limited to:

- Canarsie Tunnel Rehabilitation phase completed ahead of schedule and under budget.
- LIRR Penn Station 33rd Street Concourse completed on time and under budget.
- LIRR Third Track completed on time and \$100 million under budget.

[Comment 4](#)

Clearly, the creation of MTA C&D has resulted in significant improvements to the MTA’s ability to deliver the entire MTA Capital Program in a more cost-effective and efficient manner, from long-range planning to project development to contract award and construction delivery. It has done so by using the right delivery models, maximizing contractor and consultant performance, bundling projects, attracting more talent, defining the right scope, simplifying construction

specifications, improving coordination with third parties, tackling cost premiums, optimizing internal resources, leveraging data and technology, and more.

That said, for the nine historical Sandy projects audited, MTA C&D found, in two instances (ED010209 and ED010304), the total amount expended by the contractor on Sandy-related capital work (i.e., the subject of this audit) was less than the amount awarded (not more). In one instance, OSC’s preliminary finding stated, “The proposed budget was \$28.5 million for ED010304. It was negotiated for \$22.7 million and awarded for \$22.6 million. The vouchered amount shows that the project was closed with \$22.3 million, which indicates that the project did not exceed the budget.” We agree with the preliminary finding and confirm the amount expended by the contractor was \$341,600 less than the amount awarded. In all remaining instances where the amount expended at the end of the contract exceeded the contract amount at the time of award, the variance was either minimal in proportion to the overall budget and/or the result of justified change orders that went through the appropriate approval processes. Additional relevant details for all nine audited projects are provided below.

Comment 5

**1. B&T: ED010209 (Task E02037) – Restoration of VNB after Superstorm Sandy**

We **disagree** with OSC’s finding that the amount expended compared to the contract award, for the Sandy restoration work associated with this project (Task E020307), was over by \$66,457. As shown below, the total amount expended by the contractor (\$880,492) was \$17,508 less than the amount awarded (\$898,000) and \$62,408 less than the original amount budgeted (\$942,900).

ACEP: ED010209 (VN 99S) [Construction Task E02037]							
<u>Award Amount</u>	<u>Initial Budget</u>	<u>Final Contract Amount</u>	<u>Amount Expended</u>	<u>Award Variance</u>	<u>Budget Variance</u>	<u>% Award Variance</u>	<u>% Budget Variance</u>
	(Award Amount + MTA WAR Contingency)	(Award + Amendments)	(i.e., by the contractor)	(Amount Expended - Award Amount)	(Amount Expended - Initial Budget)	(100 x Award Variance / Award Amount)	(100 x Budget Variance / Initial Budget)
\$898,000	\$942,900	\$898,000	\$880,492	-\$17,508	-\$62,408	- 1.9%	- 6.6%

We also **disagree** with OSC’s finding that substantial completion was achieved one month behind schedule. As noted in our response to OSC’s preliminary findings, this conclusion was drawn from an error in the system of record, which has since been reconciled, versus a real-world delay. To evidence this, documentation was provided to OSC showing that substantial completion was achieved on time, on April 24, 2015.

**2. B&T: ED010301 - Hugh Carey Tunnel Mitigation Perimeter Work**

We **agree** with OSC’s findings that the amount expended was \$1.02M less than the contractually awarded amount and the project was completed within the schedule set forth at the time of award.

**3. B&T: ED010304 | TUN-MIT-01 (Task E04052) – Queens Midtown Tunnel Mitigation**

We **agree** with OSC’s finding that the project was completed within schedule; however, we **disagree** that the amount expended was \$26,558 more than the contractual awarded amount. As shown below, the amount expended (\$22.3M) was \$341,600 less than the amount awarded (\$22.7M) and \$1.46M less than the budgeted amount (\$23.8M) at the time of award (including the WAR contingency).

ACEP: ED010304 (TUN-MIT-01) [Design-Build Task E04052]						
<u>Award Amount</u>	<u>Initial Budget</u>	<u>Amount Expended</u>	<u>Award Variance</u>	<u>Budget Variance</u>	<u>% Award Variance</u>	<u>% Budget Variance</u>
	(Award Amount + MTA WAR Contingency)	(i.e., by the contractor)	(Amount Expended - Award Amount)	(Amount Expended - Initial Budget)	(100 x Award Variance / Award Amount)	(100 x Budget Variance / Initial Budget)
\$22,680,000	\$23,801,500	\$22,338,400	- \$341,600	- \$1,463,100	- 1.5%	- 6.1%

**4. B&T: ED040210 CB-99S/MP-03S - Restoration of CBB after Superstorm Sandy**

We **agree** with OSC’s finding that the expended amount was \$94,531 less than the awarded amount; however, we **disagree** that the project was completed six months behind schedule. As noted in our preliminary response:

- i. The original contract and award letter for CB-99S/MP-03S contained an administrative error regarding the contract duration (i.e., the duration was incorrectly stated as being 24 months when the agreed upon duration had been 27 months). This was reconciled in Amendment No. 3, which was provided to OSC.
- ii. A subsequent Amendment (No. 5) extended the contract by 2.5 months based on a contractually valid and excusable delay. More specifically, Requisition 7457 states, “a time extension until April 30, 2018, to the MP-03S/CB-99S Contract is necessary due to delays from the emergency feeder failure, and Con Edison delays in de-energizing and re-energizing the feeders enabling work to proceed.”
- iii. Per the Certification of Substantial Completion, which was provided to OSC, substantial completion was achieved on April 30, 2018, in accordance with Contract Amendment No. 5.

**5. B&T: ED050203 - Environmental Cleanup at QMT after Superstorm Sandy**

We **agree** with OSC’s finding that the project was completed 10 months ahead of schedule. Regarding the project’s expenditures, while it is correct that the amount expended was greater than the *original* contract amount at the time of award, as noted in our preliminary response, additional work was added to the contract to address issues encountered during construction (i.e., additional signs, clearing obstructions, unclogging and restoration of ducts). Overall, the variance between the amount expended and amount budgeted was

equivalent to an increase of 1.1% of the project’s *initial* budget. Furthermore, the additional work was completed in accordance with the final contractual amount.

ACEP: ED050203 [Construction Task E02308]					
<u>Award Amount</u>	<u>Initial Budget</u> <small>(Award Amount + MTA WAR Contingency)</small>	<u>Final Contract Amount</u> <small>(Award + Amendments)</small>	<u>Amount Expended</u> <small>(i.e., by the contractor)</small>	<u>Budget Variance</u> <small>(Amount Expended - Initial Budget)</small>	<u>% Budget Variance</u> <small>(100 x Budget Variance / Initial Budget)</small>
\$7,111,959	\$7,467,557	\$7,548,272	\$7,548,272	+\$80,715	+1.1%

**6. B&T: ED040302 - Raising of Revenue Control Equipment at OMT Svc. Building**

QM-30/QM-30S (Task E03235)

As noted in our preliminary response, in 2014, post-Sandy mitigation work was added, through a contract amendment, to a previously awarded Core Capital project (Contract QM-30) that had an original duration of 4.5 years and projected substantial completion date of June 2017. The additional, Sandy-funded work (tracked in the PSR as QM-30S/Task E03235) extended the original contract’s overall duration and target for substantial completion. The Sandy-funded work, which began in October 2014, once the amendment was issued, was prioritized, and all Sandy-funded work under QM-30 was completed by November 2018, ahead of the overall contract’s amended substantial completion.

QM-01X

As noted in our preliminary response, an approved contract amendment added several work items to the project’s scope of work. In order to provide sufficient time to complete this work, the target for substantial completion was adjusted to December 2016. Substantial completion was achieved on December 13, 2016, in accordance with the contract amendment.

**7. Buses: EU030201 - Far Rockaway Depot Recovery**

As noted in our preliminary response, an approved contract amendment (No. 8) extended the target date for substantial completion by 75 days (to November 20, 2018) based on a contractually valid, excusable, and non-impactable delay. The additional work required to achieve substantial completion was completed on November 18, 2018, in accordance with the updated schedule and requirements of the contract amendment. In addition, the final amount expended was in accordance with the final contractual amount.

**8. Buses: ET120307 – Mitigation: Casey Stengel, MJ Quill, & Castleton Bus Depots**

While it is accurate that cost and schedule impacts were incurred on this project after valid concerns were raised regarding the intended flood-mitigation asset’s potential impacts to daily operations, MTA C&D wishes to reiterate that, prior to December 2019, capital project planning resided within each of the MTA operating agencies. Capital planning and

delivery functions are now centralized under MTA C&D, and MTA C&D's new Baseline Procedure has been thoughtfully devised to gather significantly more detailed user requirements from the earliest stages of project planning.

**9. Buses: ET120309 - Yukon Bus Depot Mitigation**

During project implementation, it was noted that, for this particular location, if door flood panels versus a stainless-steel door were to be installed, then significant cost savings could be obtained without significant risk to the flood-mitigation strategy. In turn, utilization of the less expensive flood panels was reviewed and ultimately approved via a contract amendment. This resulted in an unimpactful delay to the original target date of two months but yielded a financial savings of \$72,000. Notably, substantial completion was achieved within the amended timeframe.

Key Finding No. 3

Inspections, preventive maintenance ("PM"), and corrective maintenance tasks were not completed as required or were not documented. At two MTA B&T facilities, we found no inspections of flood-proof doors had been conducted as per the contract during our audit scope, and we identified broken gasket seals (designed to prevent water leakage on the doors). Additionally, we found that issues reflected in prior inspection reports, such as cracks in crash barriers for a flood portal gate, were not corrected promptly, and subsequent reports indicated worsening damage over time.

MTA Response to Key Finding No. 3

The MTA **partially disagrees** with this finding. MTA B&T evaluates findings from inspections with respect to their effect on the flood mitigation program. If an issue noted in an inspection report will negatively impact the program's ability to protect the tunnel from a flood, it will be prioritized for repair.

[Comment 6](#)

With regard to the cracks of crash barriers observed during inspections but not 'corrected promptly', as detailed in our preliminary finding response, in the March 2020 inspection report in which the cracks were first identified, it stated, "No damage / some minor cracks." Superficial cracks are *typical* in concrete, particularly in applications where the structure is exposed to impact (e.g., a crash barrier). Furthermore, it is important to understand that crash barriers are not flood mitigation assets. Rather, their purpose is to prevent errant vehicles from damaging mitigation assets (i.e., portal flood gates). Finally, these barriers were constructed with steel reinforcing bars, in part, to prevent any cracks that would (predictably) arise from compromising their integrity. In turn, we disagree that any action beyond continuing to monitor and inspect these barriers constitutes a failure to act with the appropriate degree of accountability. Again, the observed cracks, even as noted in subsequent reports, did not compromise the integrity of the crash barriers or the associated portal flood gates. This was evidenced in a test deployment of the HLCT Manhattan East portal flood gate performed on May 9, 2023, where the barriers were removed and replaced without issue.



With regard to inspections of the flood-proof doors, since the time of the audit, MTA B&T, with the support of MTA C&D, has formalized an annual inspection program for these assets (including their associated gaskets).

Key Finding No. 4

Vehicle inspection records at B&T facilities did not indicate what was inspected. We reviewed work orders and mileage records for 38 vehicles. The work orders listed tasks, but staff did not check off to denote which were completed nor did they note any issues found.

MTA Response to Key Finding No. 4

MTA B&T **partially agrees** with this finding. There is a paper checklist for vehicle inspection that is kept at the relevant facility; it is separate documentation than the workorder entered into Hexagon. In order to close this gap, B&T will be ensuring that the paper checklist is always fully completed, available at the facility, and scanned into Hexagon once the workorder is complete.

Key Finding No. 5

Inspections were not conducted in accordance with the Bus Operations' Winter Operations Plan requirements or were insufficiently documented. For example, at four depots, records were provided for only 59 of the 336 inspections required for snow fighters (large trucks used for snow removal).

MTA Response to Key Finding No. 5

MTA Bus/NYCT-DOB **acknowledges** that the inspection records for the time period requested during the audit were incomplete. An updated permanent directive titled, "SNOW FIGHTING VEHICLE SERVICE & INSPECTION" (dated December 20, 2023) has been distributed and will be referenced in the Winter Operations Plan that will be issued in 3Q 2024. However, it is important to note that a portion of the time period at issue encompassed the years of the Covid pandemic when Buses' resources were depleted and being redeployed to tackle the most critical, urgent priorities to safeguard the health of both customers and employees.

**MTA RESPONSE TO OSC RECOMMENDATIONS**

Recommendation No. 1

Periodically update the systemwide assessment, document progress made, and report on any new conditions requiring mitigation.

MTA Response to Recommendation No. 1

MTA C&D **acknowledges** this recommendation and notes it is already being implemented. As previously stated, MTA C&D's newly formed Climate Planning Division conducted a

systemwide multi-hazard climate vulnerability assessment in 2023 and published the “Climate Resilience Roadmap” in April 2024. The Climate Resilient Roadmap tracks the locations of infrastructure mitigated against climate risk (i.e., documents progress made) and identifies locations where new mitigations may be required. Even prior to OSC’s report being issued, it was the MTA’s intention for MTA C&D’s Climate Planning Division to continue to review and update its systemwide vulnerability assessment in coordination with the various Operating Agencies at a cadence that coincides with the MTA’s capital planning process. Furthermore, the Roadmap’s findings were already used to inform the MTA’s most recent twenty-year needs assessment and five-year capital plan.

Recommendation No. 2

Monitor projects to ensure costs do not markedly exceed the contract award amount.

MTA Response to Recommendation No. 2

MTA C&D **acknowledges** this recommendation and notes that, post-transformation, MTA C&D has been doing this under its current business practices.

As previously noted, in December 2019, MTA C&D became the sole agency responsible for the planning, development, and delivery of the entire MTA capital program. The heart of MTA C&D’s mission is to execute the program *better, faster, and cheaper*. To do this, MTA C&D is delivering at scale by using innovative delivery models and bundling projects, containing cost through initiatives at every stage of the project lifecycle, tackling priority projects to deliver notable benefits to customers, and taking action to increase contractor diversity.

At the project level, to ensure that capital project contractors are not markedly exceeding their contractually awarded amounts, MTA C&D has established detailed change-management procedures for both design-bid-build (PRO-23-03) and design-build projects (PRO-24-03). These procedures define the principles, roles, responsibilities, and instructions for the evaluation and approval of proposed changes to contractually awarded projects. In short, in order for a change on a capital project contract to be approved, substantial justification must be provided to facilitate the decision making of the requisite approvers (e.g., the scope of the change, the reasons or cause that necessitated the change, the cost of the change, time impacts associated with the change, the source of funds for the change, an explanation as to why the Modification price is fair and reasonable, etc.). The proposal then works its way through a tiered level of change-management controls, where the responsibility for review and approval escalates as the potential impact grows. More specifically, “approval thresholds” directly affect the number and level of approvals required and escalate from the Business Unit Change Committee (BUCC) to the Executive Change Committee (ECC), to MTA C&D’s President, and ultimately to the MTA Board.

In addition, the MTA’s publicly available “Traffic Light Report (TLR)” ([mta.info](https://www.mta.info)) is a helpful project-monitoring tool used by MTA leadership and the MTA Board to monitor capital projects with a budgetary value of \$7M or more to see which, if any, have gone over-budget or exceeded their schedule during the most recent fiscal quarter. These reports are contained within the Capital Program Committee Books prepared, monthly, for MTA Board & Committee

Meetings. The benchmarks used to trigger a "Red Light" are projects with an increase of 10% (or index movement of 10% or more) or with an increase of three months (or more) to substantial completion, since the last TLR.

#### Recommendation No. 3

Ensure that the Master Plans are prepared in a manner that is useful to address conditions they cover, and cost estimates are escalated as appropriate.

#### MTA Response to Recommendation No. 3

The MTA Agencies **acknowledge** this recommendation and note that, in 2023, MTA C&D replaced pre-transformation Master Plans with a new Baseline Procedure (PRO-23-05) that standardizes the methodologies by which all MTA capital projects are to be executed to increase accuracy in cost estimates, establish risk profiles and mitigation strategies, and develop project performance estimates. The procedure guides MTA C&D personnel on how to work collaboratively with the Operating Agencies to advance capital projects efficiently and cost-effectively; outlines Operating Agency/Project Sponsor requirements, project scope, schedule, and cost estimates; and details key project-management planning components necessary to advance a project from inception to completion. Regarding cost estimate escalations, please see Response to Recommendation No. 2.

#### Recommendation No. 4

**To B&T:** Ensure documentation provides sufficient detail and insight to explain how a decision to add additional work was reached, rather than simply indicating the outcome.

#### MTA Response to Recommendation No. 4

MTA B&T **acknowledges** this recommendation and notes this is already being done as part of the business process set forth by MTA C&D. As noted in the response to Recommendation No. 3, a Baseline Procedure was issued by MTA C&D. As part of this procedure, "Initial Project Baselines" and "Updated Project Baselines" are reviewed and approved by the respective Operating Agencies (including but not limited to MTA B&T). Furthermore, as noted in the response to Recommendation No. 2, MTA C&D has issued new change-management procedures relevant to design-bid-build and design-build projects. In addition to establishing the principals, roles, responsibilities, and instructions for evaluating and approving proposed contract changes, these procedures outline the *documentation requirements* to advance a modification (i.e., the formal amendment to a contract that implements a change, sometimes referred to as a "change order"). These procedures also require that sufficient information be provided to enable a reader to understand the general scope of the change and the reason or cause that necessitated the change.

#### Recommendation No. 5

Maintain and inspect equipment regularly and in a timely manner, as required.

MTA Response to Recommendation No. 5

**MTA B&T Response**

MTA B&T **acknowledges** this recommendation and notes that, in partnership with MTA C&D, it has been maintaining and inspecting its flood-mitigation equipment regularly and in a timely manner and will continue to do so. As was demonstrated throughout this audit, MTA B&T has a robust program in place to inspect, maintain and perform annual test deployments of our flood-mitigation measures. As noted in response to Finding No. 3, MTA B&T and MTA C&D have already made improvements to the inspection program for flood-mitigation assets, including but not limited to a formalized program for annual inspection of flood doors and associated gaskets.

**MTA Bus/NYCT-DOB Response**

MTA Bus/NYCT-DOB **acknowledge** this recommendation and note that Buses maintains and inspects its equipment in accordance with Buses' maintenance plans, original equipment manufacturer's guidelines, and industry best practices applicable to the specific equipment, and will continue to do so. That said, in response to the preliminary audit findings, an updated permanent directive titled, "SNOW FIGHTING VEHICLE SERVICE & INSPECTION" (dated December 20, 2023) was distributed to reinforce the importance of completing regular inspections and service in a timely manner.

Recommendation No. 6

Ensure equipment is inspected in accordance with the Winter Operations Plan to effectively mitigate adverse weather conditions.

MTA Response to Recommendation No. 6

**MTA B&T Response**

MTA B&T **acknowledges** this recommendation and notes that, in January 2024, an updated procedure was distributed (OPS-663 Winter Storm Preparedness Response and Recovery, issued on January 29, 2024) that reiterated the importance of inspecting equipment in accordance with B&T's Winter Operations Plan.

**MTA Bus/NYCT-DOB Response**

MTA Bus/NYCT-DOB **acknowledge** this recommendation and note that not all storm-relevant supplies (i.e., inventory) are pieces of equipment that require inspection in accordance with the Winter Operations Plan. That said, in response to the preliminary audit findings, an updated permanent directive titled, "SNOW FIGHTING VEHICLE SERVICE & INSPECTION" (dated December 20, 2023) was distributed to remind staff of the appropriate procedure for inspecting this equipment, which is required by the Winter Operations Plan. This permanent directive will be referenced in the Winter Operations Plan that will be issued in Q4 2024.

Recommendation No. 7

**To Bus Operations:** Ensure depot personnel are trained to test, maintain, and inspect all flood mitigation equipment.

MTA Response to Recommendation No. 7

MTA Bus/NYCT-DOB **acknowledge** this recommendation. Depot personnel are trained to test, maintain, and inspect all flood-mitigation equipment requiring training. Preventative maintenance is performed based on manufacturers' specifications and documented in Buses' facilities maintenance system. As for pump trucks, in response to the preliminary audit findings, a refresher training class will be scheduled by Q4 2024. In addition, procedures are now in place to ensure pump truck training is documented and maintained in a computerized system.

Recommendation No. 8

**To Bus Operations:** Clarify in the Bus Winter Operations Plan the responsibility for performing weekly/monthly inspections of snow-fighter equipment. Update the WOP to include the policy for inspecting payloaders and include a sample preseason inspection form.

MTA Response to Recommendation No. 8

MTA Bus/NYCT-DOB **agree** with this recommendation. The responsibility for performing weekly/monthly inspections of snow-fighter equipment will be clarified in the Bus Winter Operations Plan. Buses' Winter Operations Plan will be issued in Q4 2024 and will include a reference to the updated permanent directive titled "SNOW FIGHTING VEHICLE SERVICE & INSPECTION" (dated December 20, 2023) which clearly outlines such responsibility. In addition, the Winter Operations Plan will reference the Policy Instruction for payloaders and sample inspection by Q4 2024.

Recommendation No. 9

**To B&T:** Ensure repairs are performed promptly after each inspection.

MTA Response to Recommendation No. 9

MTA B&T **acknowledges** this recommendation and notes that, even before this audit, in coordination with MTA C&D, it was ensuring that repairs of flood mitigation equipment were being performed promptly after inspection and maintenance, and it will continue to do so. As discussed in detail in the response to preliminary findings, any issues noted during an inspection that would negatively impact the program's ability to protect B&T facilities from a flooding event have been, and will continue to be, prioritized for prompt repair.

Recommendation No. 10

**To B&T:** Improve the vehicle PM by:

- Ensuring that each is done timely.
- Indicating all the PM tasks that are completed on each work order.
- Ensuring mileage is recorded and accurate for each vehicle for use in determining required maintenance.

MTA Response to Recommendation No. 10

- **Ensuring that each is done timely.** MTA B&T **acknowledges** this recommendation and notes that, through Hexagon, all vehicle PMs are completed in a timely manner based upon the calendar and mileage requirements set forth within “Fleet Preventative Maintenance Procedure SMP-FO-0510-1.”
- **Indicating all the PM tasks that are completed on each work order.** MTA B&T **agrees** with this recommendation and will implement a full electronic inspection checklist in Hexagon for each vehicle PM. All fields will be required to be completed. Estimated implementation of the electronic checklist for vehicle PMs is the first quarter of 2025.
- **Ensuring mileage is recorded and accurate for each vehicle for use in determining required maintenance.** MTA B&T **agrees** with the recommendation and, through new data rules, will ensure all digital PM work orders require a mileage entry before they are allowed to be completed within Hexagon. Estimated implementation is the first quarter of 2025.

Recommendation No. 11

**To B&T:** Ensure that the correct form is used for each facility to clearly document the equipment being inspected/tested and forms need to be filled out entirely.

MTA Response to Recommendation No. 11

While MTA B&T **acknowledges** that, in a few instances, the form used to document generator testing conducted at a few sampled locations was incorrect (i.e., the *version* used was customized to a different facility), it is important to note that facility generator testing was completed in accordance with MTA B&T’s testing schedule. B&T management will reinstruct its Maintenance staff on the importance of using the correct testing form when conducting generator testing at each facility and to complete those forms both clearly and completely.

Recommendation No. 12

**To B&T:** Ensure appropriate documentation is prepared and maintained for each weather event. Implement the Facility Log system for all weather events—not only for winter events.

MTA Response to Recommendation No. 12

MTA B&T **agrees** with this recommendation and notes that it is currently working with MTA IT on development of an upgrade to the Facility Storm Log to include all types of weather events. This task is expected to be completed in 2025.

Recommendation No. 13

**To Bus Operations:** Ensure that:

- Decisions made throughout an entire weather event are documented.
- The appropriate level of alert is issued when the weather condition is forecasted.
- Plans are in place for unusual weather conditions such as tornadoes, flash flooding, and flash freezing.

MTA Response to Recommendation No. 13

MTA Bus/NYCT-DOS **acknowledges** the first two bullets of this recommendation. Bus Operations has policies in place to ensure key decisions made during weather events are documented and weather event notifications, including alert levels for the forecasted weather conditions, are issued in accordance with the Winter Operations Plan, and will ensure that these policies are followed.

MTA Bus/NYCT-DOS **agrees** with the final bullet of this recommendation. In June 2024, Bus Operations updated its Coastal Storm Plan to include specific language for tornado and flash flooding. In Q4 2024, the Winter Operations Plan will be issued and will address specific language for flash freezing.

\* \* \*

We appreciate the OSC's work and their consideration of this response in issuing a final report. In the interim, should they need any additional information or have any questions, they should reach out to their designated agency contacts.

Very truly yours,



Catherine Sheridan  
MTA B&T President



Demetrius Crichlow  
NYCT Interim President



Jamie Torres-Springer  
MTA C&D President

cc: Laura Wiles, MTA Chief of Staff  
Monica A. Murray, MTA Auditor General  
Paige Graves, MTA General Counsel  
Darren Jurgens, MTA Assistant Auditor General  
Steven Loehr, MTA C&D Chief of Staff  
Shawn Moore, MTA C&D Chief Administrative Officer  
Evan M. Eisland, MTA C&D Executive Vice President & General Counsel  
Diane M. Nardi, MTA C&D Senior Vice President & Deputy General Counsel  
Tim Mulligan, MTA C&D Deputy Chief Development Officer, Development  
Mark Roche, MTA C&D Deputy Chief Development Officer, Delivery  
Joe Keane, MTA C&D Senior Vice President/Business Unit Lead, Bridges & Tunnels  
Peter Kohner, MTA C&D Senior Vice President/Business Unit Lead, Infrastructure  
Jeanne M. Davis, MTA C&D Vice President, Corporate Audits  
Diane Kenneally, MTA B&T Chief of Staff & Chief Administrative Officer  
Allison C. de Cerreño, MTA B&T Chief Operating Officer  
Edwin King, MTA B&T Executive Vice President  
Marlene Thompson, MTA B&T Senior Vice President, Facility Management  
Donald Look, MTA B&T Senior Vice President, Internal Affairs & Security Advisor  
David Farber, NYCT & MTA Bus General Counsel  
Theresa Murphy, NYCT Acting Chief Administrative Officer  
Franck Joseph, NYCT Acting Chief of Staff  
Frank Annicaro, NYCT-DOB/MTA Bus Company Senior Vice President  
Zafira Lateef, NYCT-DOB Chief of Staff & Vice President Business Strategy  
Zena Teich, NYCT-DOB Deputy Controller  
Howard Khuu, NYCT-DOB Chief Officer, Audit Oversight



# State Comptroller's Comments

---

1. Our report recognized B&T had projects to address conditions at selected facilities. However, neither B&T, nor MTA Bus, nor Transit Bus provided a systemwide assessment or any collection of projects that, when combined, covered their entire systems. During our audit of the Long Island Rail Road, we were advised that C&D was in the process of conducting an assessment and the results would be available in Q4 of 2023; this was confirmed by a C&D official. However, although requested, these results were not provided to the auditors. While this was the basis of the Climate Resilience Roadmap issued in April 2024, the Roadmap itself is not a substitute for an assessment of the type called for in 2009; rather, it is a framework for dealing with climate change.
2. According to the officials responsible for capital projects, if there is a written document to justify additional time, additional funds, or both, a project should not be considered late and/or over budget. However, while the context for these decisions may explain the delay or additional cost, it does not alter that the project was late and/or over budget.
3. We cannot evaluate the reliability of these statements as the underlying data was not provided to us and such an assessment was outside of the objectives of this audit.
4. Available information shows that the Long Island Rail Road Third Track project started construction in April 2018. This precedes the December 2019 Board resolution creating the new C&D.
5. We cannot verify the reliability of these statements due to a lack of supporting data. The response offers a summary of what MTA and C&D want to present without substantiating the figures or claims. For instance, in our report, a project for raising the revenue control equipment at the Queens-Midtown Tunnel was estimated at \$12.5K but completed at \$78.5K. This small project alone ended up costing six times its original estimate.
6. The response states that, if an issue is noted in an inspection report that may impact the ability to protect the tunnel from a flood, it will be prioritized for repair. However, as we stated in our report, B&T did not have documentation that it reviewed the contractor's inspection report and concluded that no repair was needed. There were other conditions reported by the contractor that B&T indicated did not require attention, but these decisions were also not documented.

# Contributors to Report

---

## Executive Team

**Andrea C. Miller** - *Executive Deputy Comptroller*

**Tina Kim** - *Deputy Comptroller*

**Stephen C. Lynch** - *Assistant Comptroller*

## Audit Team

**Carmen Maldonado** - *Audit Director*

**Robert C. Mehrhoff** - *Audit Manager*

**Erica Zawrotniak** - *Audit Supervisor*

**Katrina Lau** - *Examiner-in-Charge*

**Anuradha Baldeo** - *Senior Examiner*

**Brenda-Lee Persad** - *Senior Examiner*

**Gisselle Ramirez-Toledo** - *Senior Examiner*

## Contact Information

(518) 474-3271

[StateGovernmentAccountability@osc.ny.gov](mailto:StateGovernmentAccountability@osc.ny.gov)

Office of the New York State Comptroller  
Division of State Government Accountability  
110 State Street, 11th Floor  
Albany, NY 12236

