



Metropolitan Transportation Authority

State of New York

August 27, 2024

Hon. Kathy Hochul
Governor
The Capitol
Albany, NY 12224

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

RE: Response to Final Report #2022-S-6 – Mitigation for Extreme Weather Conditions and Flooding

Dear Governor Hochul and Comptroller DiNapoli:

On March 13, 2024, the Office of the State Comptroller issued the above referenced audit report. As required by Section 170 of the Executive Law, I am providing you with the attached response which addresses the recommendations contained in the report.

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

Sincerely,

A handwritten signature in blue ink that reads "Janno Lieber".

Janno Lieber

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



Long Island Rail Road

August 23, 2024

Mr. Janno Lieber
Chair and Chief Executive Officer
Metropolitan Transportation Authority
2 Broadway, 20th Floor
New York, NY 10017

RE: Mitigation for Extreme Weather Conditions and Flooding Report No. 2022-S-6

Dear Chair Lieber,

As required by Section 170 of the Executive Law, below is the status addressing the recommendations in the above-referenced report. The report contained 12 recommendations. LIRR's and MTA's position as reported in our 30-day response dated January 25, 2024 to the Office of the Comptroller's Final Draft report remains unchanged. The focus of the audit was to determine whether LIRR performed a systemwide risk assessment to identify potential risks to its system from extreme weather conditions and flooding, developed plans to mitigate their effects, tested and updated the plans, and inspected/maintained the equipment to ensure they can be deployed when needed.

Recommendation #1

- Ensure that the systemwide risk assessment of the LIRR is completed on schedule and documented.

Original Response:

The MTA acknowledges this response and is already performing a system wide risk assessment. More specifically:

1. LIRR and its partners have already conducted a targeted analysis of specific vulnerability to LIRR's infrastructure relating to costal flood areas. Proof of this analysis was previously provided to the OSC and is summarized as follows:
 - a. MTA Climate Adaptation Task Force Resiliency Reports from 2017 and 2019 discussing LIRR projects:
 - Long Beach Branch Signal and Communications Systems: Replaced damaged signal, power and communications system components and cabling along the right-of-way of this low-elevation, coastal commuter rail line.
 - Long Beach Branch Substations: Replaced three Long Beach Branch substations at Oceanside, Oil City and Long Beach Yard damaged by Superstorm Sandy storm surge flooding.

- b. LIRR Long Beach Branch Damage Assessment - Signals, Power & Communications Systems: Site inspection and damage assessment of the signals, traction power and communications systems on the LIRR's Long Beach Branch conducted by a team of independent railroad engineering experts with the support of LIRR's Engineering Department.
 - c. LIRR Post-Sandy Damage Assessment - Signals, Power & Facilities: Third-party assessment (Parsons and its sub-consultants accompanied by LIRR) to provide an informed professional review of the condition of LIRR's infrastructure following Hurricane Sandy based upon in-field observations of current conditions as well as reports by LIRR employees.
 - d. NYS 2100 COMMISSION Report - Recommendations to Improve the Strength and Resilience of the Empire State's Infrastructure: Commission convened in response to the unprecedented, severe weather events experienced by New York State and the surrounding region: most recently, Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee. The Commission was tasked with examining and evaluating key vulnerabilities in the State's critical infrastructure systems and recommending actions that should be taken to strengthen and improve the resilience of those systems. These events informed the selection of Sandy projects that were identified and funded back in 2013 that have been executed (and are being executed) since.
 - e. Stormwater Task Force Investigations - Executive Summary Final Draft: Stormwater Task Force initiated by MTA and NYC following a series of major rain events that impacted the MTA in the summer of 2021, including various MTA departments, NYCDEP, NYCDOT, NYCEM, and the New York City Mayor's Office of Climate Resiliency (NYCMOCR) to investigate over 150 MTA locations identified as historic and/or potential future flood risks with the aim of identifying root causes and proposing solutions to mitigate flood impacts. (Already provided by MTA C&D).
2. In addition, LIRR has identified corrective actions and mitigations based on specific assessments, which are conducted on a regular basis:
- a. Sandy resiliency improvements to mitigate flooding in addition to the Long Beach projects noted above:
 - Raising substations and signal boxes.
 - Flood walls at Long Island City and West Side Yard
 - The LIRR is in the process of working with Amtrak to design barriers for the east portals of the East River Tunnel.
 - b. Efforts along LIRR's Right-of-Way including working with LIPA to replace downed poles, insulating miles of wires, managing an aggressive brushing clearing program, adding infrastructure to heat the 3rd rail in known problem areas, and changing snow clearing strategies in key areas prone to cause shutdowns of service.

3. In addition, MTA C&D has performed a vulnerability assessment of all MTA agencies that is being finalized and will support the MTA's climate resilience plan, which will be publicly released in the first quarter of 2024.

Implementation Status Update:

Implemented. In 2023, the MTA C&D new climate planning division conducted a systemwide multi-hazard climate vulnerability assessment to understand the magnitude and timing of climate change impacts on our infrastructure. The assessment drew on multiple data sets to forecast rising climate threats in the New York City region, including coastal surge, sea-level rise, torrential rain, and extreme heat, and then applied that knowledge to identify evolving vulnerabilities across the MTA network through 2080. These vulnerabilities, and the MTA's strategic plan to address the threats they pose, are highlighted in the MTA C&D's recently published "Climate Resiliency Roadmap" (April 2024).

Recommendation #2

- Verify the work done to implement the lessons learned related recommendations was completed.

Original Response:

The LIRR acknowledges this recommendation. LIRR's Transportation department already identifies recommendations resulting from lessons learned as well as tracks their implementation with applicable departments as noted in the preliminary letter. Nevertheless, Transportation will modify its current lessons learned spreadsheet by adding a separate column for "Notes" thereby differentiating between Recommendations and Notes.

The WSOP and Coastal Storm Guidelines and Other Contingencies (Previously known as Hurricane Guide as of June 2023) are updated based on recommendations generated during lessons-learned meetings conducted after weather events. Officials convene to analyze the activities that occurred during the event, determine the effectiveness of the procedure, and recommend modifications to enhance the LIRR's ability to manage future storms. It is the responsibility of each department to verify and implement their respective recommendations from lessons learned.

Additionally, the WSOP and Coastal Storm Guidelines and Other Contingencies have recently undergone updates based on lessons learned meetings. While some recommendations have been partially implemented, there are long-term recommendations that are currently on hold, awaiting further action.

Implementation Status Update:

Implemented. Transportation has modified its current lessons learned spreadsheet by adding a separate column for “Notes” thereby differentiating between Recommendations and Notes. Each department is responsible for verifying and implementing their respective recommendations from lessons learned. Engineering has implemented recommendations from lessons learned and has developed and implemented a standardized document for employee/department coverage, which is regularly updated and shared via email with key stakeholders, including Transportation. This proactive approach ensures effective preparation and coordination before any major storm or related emergency event.

Recommendation #3

- Formalize the written weather monitoring process including, but not limited to, the following:
 - The receipt and review of weather reports and identification of the weather conditions that necessitate a notification to LIRR departments.
 - The retention of weather reports that require notification.

Original Response:

The LIRR acknowledges this recommendation. Written procedures for the receipt and review of weather reports and identification of weather conditions already exist in LIRR’s WSOP and Coastal Storm Guidelines and Other Contingencies, both of which have been provided to the audit team.

As stated in the WSOP:

Infrastructure Outlook – “The Engineering Department will normally monitor the weather four times a day. The consultant under contract will provide meteorological information. This information shall be used for storm preparation and planning. Any severe weather/watch/warnings to the railroad area shall immediately be reported to the Engineering System Operating Center, Senior Vice President -Operations, Chief Engineer’s Office in Hillside Support Facility, Chief Transportation Officer, and Movement Bureau.”

Incident Response Structure states that Engineering provides weather updates during conference calls.

As stated in the Coastal Storm Guidelines and Other Contingencies:

Hurricane Weather Monitoring:

- The primary responsibility for weather monitoring throughout the year belongs to the Chief Engineer. Under his direction, Metro Weather Service is under contract to provide the Engineering System Operator weather forecasts. Those forecasts and predictions will be provided to other operating departments.

- Meteorological information will be provided to the LIRR by the meteorological consultant under contract. The Consultant will information and documentation of local hurricane/weather conditions at various locations in Manhattan, Brooklyn, Queens Boroughs, Nassau, and Suffolk Counties. This information shall be the primary source of information for storm preparation and planning.
- The contract Weather Consultant will advise of severe hurricane/weather/watch/warnings to the LIRR immediately after posting.
- The Engineering Operations Department normally monitors the weather five (5) times each day, via the Metro Weather updates at 6:00am., 10:00 a.m., 2:00 p.m., 6:00 p.m., and 10:00 p.m. Three (3) days prior to the hurricane, the Weather Consultant will provide the Engineering Department with special weather statements, one (1) in the morning and one (1) in the afternoon, using updates from the National Hurricane Forecast Center and continuing until the event is over.

LIRR will archive weather reports received from Metro Weather that meet the necessary criteria, and that support and correspond to, notifications to departments. LIRR will continue its current process of accessing DTN weather reports via the historical weather section on DTN's website.

The LIRR has updated the Coastal Storm Guidelines and Other Contingencies, and has formalized the written weather monitoring process including, but not limited to, the following:

- The receipt and review of weather reports and identification of the weather conditions that necessitate a notification to LIRR departments.
- The retention of weather reports that require notification.

Implementation Status Update:

Implemented. Written procedures for the receipt and review of weather reports and identification of weather conditions already exist in LIRR's WSOP and Coastal Storm Guidelines and Other Contingencies, both of which have been provided to the audit team.

Recommendation #4

- Ensure that the responsibility for reviewing and maintaining weather reports has 24/7 coverage.

Original Response:

The LIRR acknowledges this recommendation. The LIRR has 24/7 coverage for the review of weather reports. Forecasts are available and widely disseminated to department leadership and Engineering System Operations (ESO). Staffing is coordinated and established to cover each forecast as appropriate. In the event of a known weather incident weather is continually monitored 24/7.

Nevertheless, the WSOP is currently undergoing revisions to ensure it accurately reflects the intended purposes and objectives. This includes incorporating the latest guidance to align with the actual needs and requirements.

Implementation Status Update:

Implemented. The WSOP has undergone revisions to ensure it accurately reflects the intended purposes and objectives. This includes incorporating the latest guidance to align with the actual needs and requirements. Access to up-to-date contractor weather reports is readily available online and via internal shared folders, at any given time. Furthermore, Engineering has dedicated personnel available 24/7 to promptly retrieve and provide weather information to key senior personnel when needed.

Recommendation #5

- Revise the Hurricane Guide [name changed to Coastal Storm Guidelines and Other Contingencies] to include written procedures or required steps in preparation for the season.

Original Response:

The LIRR acknowledges this recommendation. The LIRR conducted a review of the Coastal Storm Guidelines and Other Contingencies which included a Pre-storm checklist that departments can utilize, where applicable, in preparation for the season.

Implementation Status Update:

Implemented. The LIRR included a pre-season checklist of required steps that departments can utilize, where applicable, in preparation for the season. Each department is responsible for ensuring all pre-season preparations are documented in their respective sections of the Coastal Storm Guidelines, if applicable.

Recommendation #6

- Ensure the LIRR operating departments comply with seasonal (winter) preparation guidance.

Original Response:

The LIRR acknowledges this recommendation. The Transportation Department ensures compliance with an internal checklist to ensure that all preparation items have been completed. Additionally, the Engineering Department is currently exploring the possibility of documenting weather-related work orders in an Enterprise Asset Management System.

Implementation Status Update:

Implemented. The Transportation Department has ensured compliance with an internal checklist to ensure that all preparation items have been completed prior to the season. A pre-season checklist is shared with other departments one to two days in advance of a storm. Each department is responsible for its respective tracking. Additionally, the Engineering Department has developed a work order checklist in their Enterprise Asset Management System (EAM), where applicable, tailored to disciplines before the upcoming winter season.

Recommendation #7

- Expand written procedures to account for the supply, maintenance, and location of equipment. Additionally, locate the missing equipment items.

Original Response:

The LIRR agrees with this recommendation. LIRR will create a checklist that departments can utilize to help account for winter supplies, maintenance, etc. as outlined in the plan.

Despite the absence of written procedures, the following clarifications should be noted:

1. On page 12 under Maintenance of Equipment: "Maintenance of Equipment officials stated that they procure winter operation materials and rental equipment almost year-round..."

MofE reviews, discusses, and coordinates the leasing of equipment almost continuously, but the actual ordering is done only as required.

2. On Page 13: "Track was supposed to have one backhoe loader, 10 front loaders, and 12 light towers; however, the backhoe loader, five of the front loaders, and two of the light towers were not at the site. Officials stated that the equipment was currently being used in the field; however, there was no documentation showing the location."

The remaining forklifts that were not observed during the site visit to the Upper Holban Shop were all accounted for at the time of the audit. As explained to the auditors, this equipment is disbursed appropriately to various divisions and gangs throughout the 700+ miles of track that Engineering covers in cases of emergencies, as well as for maintenance, inspections, and repairs. It should also be noted that the larger equipment (e.g., front loaders) are equipped with GPS technology that allows Engineering to locate them at any time.

Implementation Status Update:

Ongoing. The winter drill meeting is scheduled to occur in November 2024 and WSOP update is scheduled to occur in December 2024. As part of their commitment to effective winter operations, the LIRR will be creating a comprehensive checklist that departments

can utilize. This checklist will serve as a valuable tool to account for various aspects related to winter supplies, maintenance, and more, as outlined in the plan. To further enhance equipment management practices, the WSOP will also include expanded written procedures. WSOP is updated on an annual basis. The Track discipline in the Engineering department is exploring the feasibility of integrating equipment into the current AVL system and/or using asset tagging to track the location of equipment. However, in the interim, equipment is assigned to specific Divisions that are responsible for identifying the utilization and location of the equipment as needed.

Recommendation #8

- Review and revise the WSOP, where appropriate, to ensure uniformity between the agency's guidelines and department practices.

Original Response:

The LIRR agrees with this recommendation. The LIRR will conduct an evaluation of the WSOP documents to ensure uniformity amongst departments, as feasible. As information, this practice is performed and reviewed annually and documented in the appendix of the WSOP.

Implementation Status Update:

Ongoing. The WSOP working meeting is scheduled to take place in November 2024. During this meeting, the WSOP will be thoroughly examined and updated as necessary to ensure consistency between the agency's guidelines and departmental practices. This revision process aims to establish a unified and cohesive approach within the organization.

Recommendation #9

- Update and revise the WSOP to include guidance as to what is required for the winterization of equipment.

Original Response:

The LIRR agrees with this recommendation. The WSOP presently includes Winterization Procedures for the Maintenance of Equipment department, specifically focused on Locomotives, Coaches, and MU Equipment. In the Engineering department, winter equipment undergoes in-house maintenance and testing conducted by maintainers, plumbers, and work gangs. Additionally, LIRR has engaged the services of two contractors within the Power discipline to handle repairs involving significant damage or parts replacement upon request, as well as quarterly preventive maintenance (PM) tasks. The winterization of equipment and guidance is determined by its respective maintenance specifications.

Implementation Status Update:

Ongoing. The WSOP working meeting is scheduled to take place in November 2024. During this meeting, the WSOP will be updated and revised to include guidance as to what is required for the winterization of equipment. When performing maintenance on equipment, Engineering follows Original Equipment Manufacturer (OEM) procedures and refers to departmental best practices. Specific instructions for seasonal preparation maintenance are documented on work orders within the EAM System.

Recommendation #10

- Ensure all equipment is maintained, inspected, and tested regularly in a timely manner and documented.

Original Response:

The LIRR acknowledges this recommendation. LIRR ensures that all equipment is in proper working order in preparation for the winter season and throughout the year. It should be noted that the audit team found no instances where the equipment was not working as intended thus there is no evident cause and effect between the lack of documentation as stated in the report and the working condition of the equipment.

Consumables such as portable generators, pumps, and chainsaws are maintained and repaired by third-party vendors and LIRR in-house personnel. Service tickets are available and attached to paid invoices for the third-party vendors. On-rail equipment receives the necessary winter maintenance each season. Hard-copy work orders are retained specific to maintenance performed and the item repaired, not specific to “winter preparation”.

Moving forward, LIRR can begin to work towards consistently documenting equipment winterization in its maintenance records. Further, LIRR will investigate the feasibility of ensuring service tickets are generated and archived for consumables maintained in-house.

The Engineering Department has developed a system for winter preparation work orders to be created upon the equipment’s arrival and tracked through an Enterprise Asset Management System. In addition, categories have been established to track, analyze, and maintain equipment, as well as inspect and test it. This systematic approach ensures that equipment is appropriately prepared for winter and that records are maintained for future reference.

The LIRR has ensured that all equipment is in proper working order in preparation for the winter season and throughout the year.

Implementation Status Update:

Implemented and ongoing LIRR is taking steps to enhance its maintenance records by consistently documenting equipment winterization. By maintaining detailed records, Engineering can effectively track the winterization activities performed on various equipment and identify any areas that require improvement or further attention. Maintenance frequencies for each piece of equipment are based on OEM recommendations and departmental best practices within the Track discipline.

Recommendation #11

- Establish clear and complete written procedures to address the maintenance, inspection, and testing process of equipment.

Original Response:

The LIRR acknowledges this recommendation. The WSOP presently includes Winterization Procedures for the Maintenance of Equipment department, specifically focused on Locomotives, Coaches, and MU Equipment. In the Engineering department, winter equipment undergoes in-house maintenance and testing conducted by maintainers, plumbers, and work gangs. Additionally, LIRR has engaged the services of two contractors to handle repairs involving significant damage or parts replacement upon request, as well as quarterly preventive maintenance (PM) tasks. The winterization of equipment and guidance is determined by its respective maintenance specifications.

Implementation Status Update:

Implemented and ongoing. The WSOP working meeting is scheduled to take place in November 2024 and the WSOP document is scheduled to occur in December 2024. The updated WSOP document will highlight the need to consider and follow the maintenance specifications provided by the equipment manufacturers or designated guidelines. This ensures that maintenance practices align with industry standards and best practices for each specific type of equipment. The Track discipline in the Engineering department has updated its work order format to specify the type of work being performed: corrective, preventive, or winter preparation. These work orders are entered into the EAM system for proper documentation.

Recommendation #12

- Ensure that all projects include provisions for working with internal LIRR groups and other MTA agencies, and external agencies to expedite the project's completion.

Mr. Janno Lieber
August 23, 2024
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Original Response:

The MTA acknowledges this response and already includes this in connection with its projects. MTA C&D capital construction contracts include a section entitled “coordination and cooperation with other contractors, utilities and other public agencies” Article 4.01 of the “MTA General Provisions for the Design Build Contract” which addresses this recommendation.

In addition, we note that the MTA C&D project CEO works directly with LIRR, the other MTA agencies, and external agencies to assist in the coordination of all capital project work to ensure minimal impact to their business operations.

Implementation Status Update:

Implemented. As noted in the original response, even prior to publication of the State’s final report, MTA C&D capital construction contracts included a section entitled, “coordination and cooperation with other contractors, utilities and other public agencies” in Article 4.01 of “MTA General Provisions for the Design Build Contract.”

In addition, MTA C&D project CEOs have worked, and will continue to work, directly with LIRR, the other MTA agencies, and external agencies to assist in the coordination of all capital project work to ensure minimal impact to their business operations.

Sincerely,



Rob Free
LIRR President

cc:

Steven Loehr – C&D
Diane Kenneally – C&D
Diane Nardi – C&D
Jeanne Davis – C&D

Paul Dietlin – LIRR
Ed McGoldrick – LIRR
Kurt Sobina – LIRR
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