

Storm performance review

MTA Operating Committees
June 27, 2011



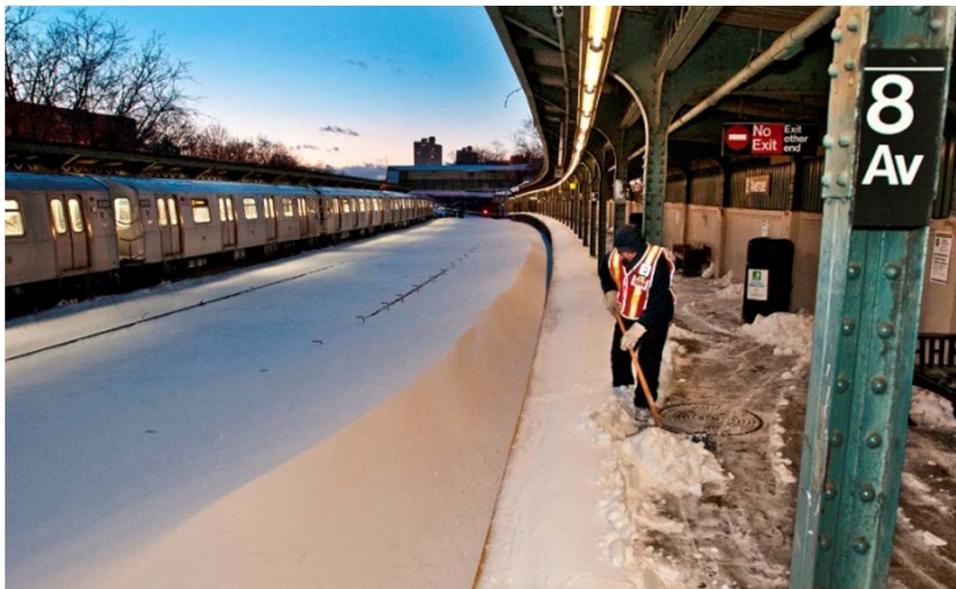
The December 2010 storm impacted the entire metropolitan region

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|------------------------|--|
| Pre-December 25 | <ul style="list-style-type: none"> • Storm severity downgraded but forecasts volatile |
| Dec 25 (Sat) | <ul style="list-style-type: none"> • Storm severity upgraded • Blizzard warning issued • Subway cars stored underground, General Orders suspended |
| Dec 26 (Sun) | <ul style="list-style-type: none"> • MTA activates special snow advisory homepage • Continued deployment of snow-fighting equipment across agencies • Snowfall begins • Service difficulties across region begin (1800+) <ul style="list-style-type: none"> – Storm rapidly intensifies – Amtrak suspends NYC-Boston service – JFK/LGA/EWR close; JFK AirTrain service suspended – NJT suspends all bus service – NYCT service affected due to stranded trains in outdoor areas – LIRR suspends all service – Many in-service buses begin to become immovable due to rapidly accumulating snow |
| Dec 27 (Mon) | <ul style="list-style-type: none"> • Significant service disruptions across region <ul style="list-style-type: none"> – MNR service suspensions begin – Bus service curtailed severely – Several Subway and MNR trains are stuck and then eventually rescued – Significant snowfall ends but high winds and drifting continue – Amtrak resumes NYC-Boston service with delays – Limited LIRR and MNR service resumes – Suspended Subway services begin to be resumed – JFK/LGA/EWR reopen with limited capacity |
| Dec 28 (Tue) | <ul style="list-style-type: none"> • MNR operates Saturday schedule • Majority of suspended Subway services restored • Majority of suspended Bus services restored • NJT resumes bus service • JFK AirTrain service resumes |
| Dec 29 (Wed) | <ul style="list-style-type: none"> • Regular service restored at MNR and LIRR (except buses provided east of Ronkonkoma until 12/31) • All runways clear at JFK/LGA/EWR • Stuck buses fully retrieved |
| Dec 30 (Thur) | <ul style="list-style-type: none"> • All routes restored for Subways and Buses, with some modified bus routes until Jan 2 (Sun) • All NYC streets plowed |

Heavy snowfall led to service disruptions across the MTA



Several days were needed to clear snow and restore MTA-wide service

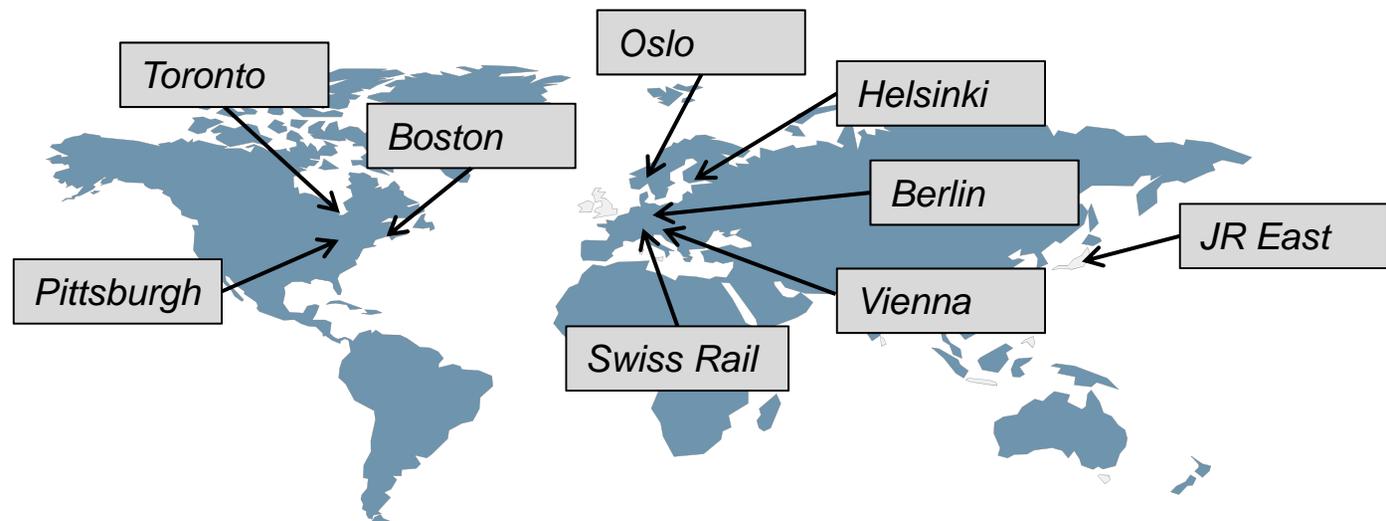


In the wake of the storm, the MTA commenced a two-phase review process to identify actions that would improve storm performance

Agency-led
initial reviews

MTA-led
in-depth review

- Preliminary assessment of Agency performance
- Immediate actions that led to improved performance in Jan and Feb storms
- Interviews with over 40 executives and senior managers across the MTA
- Review of other storm reports by MTA (2004 and 2007), NYC, Eurostar, etc.
- Outreach to peer properties to learn about good practices:



MTA storm report issued today, with
recommendations and Agency action plans

The review process generated 25 MTA-wide recommendations for improving storm performance, including:

Operations

- MTA-wide coordination facilitated by a dedicated Emergency Coordinator
- Preemptive service curtailment when conditions render normal service untenable
- Procedures for managing stuck vehicles, including attending to customer needs

Customer communication

- Proactive outreach to alert the public to possible service curtailments
- Multiple channels of communication including *mta.info* site, 311, social media
- Procedures for providing service updates to customers already in system

Staffing

- Procedures for maximizing work force availability during storms
- Flexible use of labor including geographic assignments and work functions
- Transportation staff training on winter operations, including disruption management

Equipment

- Real-time monitoring such as GPS to enable proactive operations management
- Appropriate snow-fighting equipment maintained in a state of good repair
- Ongoing capital investment to ensure fleet and infrastructure preparedness

Review of LIRR performance in the December storm has resulted in a series of already-completed improvements

Dec storm strengths

- Early activation of highest Level 4 storm response
- Preemptive service curtailment kept trains from becoming stuck between stations
- Effective deployment of comfort trains for passengers stranded overnight
- Coordination with Subways to move stranded customers from Penn to Jamaica

Dec storm issues

- Infrastructure problems developed early and quickly hampered service
- Limited availability of staff and equipment contributed to slow recovery
- Poor customer communications about service recovery plans
- Insufficient capacity to meet rush hour demand during recovery

Completed improvements

- Introduced procedures for concentrating resources on clearing vulnerable switches
- Developed improved strategy for operating reduced-service storm schedules
- Upgraded AVPS customer information system to enable faster service updates

LIRR is also pursuing an action plan of additional improvements, most of which will be completed by next winter, including:

Operations

- Update and expand winter storm protocols to improve documentation of events
- Implement revised storm operating procedures to reduce the number of switches that must be cleared around Jamaica station

Customer communication

- Improve procedures for proactively informing customers about train storm service schedules and status before and during storms
- Provide customer information on station parking lot plowing status

Staffing

- Explore options for increasing staff availability or securing other resources to enable more rapid clearing and recovery of infrastructure
- Re-introduce mass-call system to facilitate rapid mobilization of hourly staff

Equipment

- Procure enhanced plow and jet blowers for clearing snow from tracks
- Complete modifications to diesel fleet to prevent snow ingestion

Review of MNR performance in the December storm has resulted in a series of already-completed improvements

Dec storm strengths

- Early meeting of Emergency Management Task Force (EMTF)
- Early pre-positioning of staff and snow-fighting equipment
- Customer Information Center (CIC) remained open through night of Dec 26/27
- Effective coordination of recovery, leading to rapid service restoration

Dec storm issues

- Services curtailed only after several trains became stuck
- Insufficient capacity to meet rush hour demand during recovery
- Vulnerable DC legacy fleet (primarily issue in subsequent storms)

Completed improvements

- Designated customer advocate in situation room to monitor stuck customers
- Developed procedures for preparing longer trains to maximize recovery capacity
- Updated procedures for operating patrol trains (without customers) to clear tracks
- Introduced pre-positioning of diesel trains for first AM services after storms

MNR is also pursuing an action plan of additional improvements, most of which will be completed by next winter, including:

Operations

- Develop improved strategy for operating reduced-service schedules during storms and subsequent recovery

Customer communication

- Coordinate with NYCT to provide subway service status information at GCT and other key stations
- Complete upgrades to public address system at outlying stations

Staffing

- Explore options for increasing staff availability or securing other resources to enable more rapid clearing and recovery of signals infrastructure

Equipment

- Evaluate benefits of fitting support vehicle fleet with GPS tracking
- Continue to accept and put into service new M8 trains to reduce dependency on DC legacy fleet (i.e., M2, M4, M6)

Review of Subways performance in the December storm has resulted in a series of already-completed improvements

Dec storm strengths

- Advance preparations were mobilized (e.g., storing trains underground)
- Large portion of network delivered uninterrupted service
- Customer communications were generally clear and consistent
- Ongoing NYPD and NYFD representation at the RCC to facilitate coordination

Dec storm issues

- Delayed formal declaration of highest-alert Plan IV storm procedures
- Preemptive service curtailments not effectively used as conditions degraded
- Extended time period required to rescue customers stuck aboard A line train
- Limited availability of staff and equipment contributed to slow recovery

Completed improvements

- Reorganized to centralize command and control
- Created Incident Command Center (ICC) at the RCC
- Designated customer advocate role at the ICC to monitor stuck customers

Subways is also pursuing an action plan of additional improvements, most of which will be completed by next winter, including:

Operations

- Develop new Plan V storm alert level with enhanced procedures for controlled service curtailment
- Review procedures for managing stuck train events

Customer communication

- Introduce cell phone coverage on subway platforms
- Develop improved protocols for using customer information displays and public address system to update customers already traveling in system

Staffing

- Implement mass-call system to facilitate rapid mobilization of hourly staff
- Develop procedures for mobilizing administrative staff in support roles during severe storms

Equipment

- Complete procurement of eight new snow throwers
- Revise control software on New Technology fleets to improve tolerance for poor third rail contact

Review of Buses performance in the December storm has resulted in a series of already-completed improvements

Dec storm strengths

- Night and articulated buses equipped with chains as planned
- Some services that could not be operated effectively held back
- Strong displays of employee commitment (e.g., bus operators volunteering to dig out stuck buses, stuck passengers given rides in Buses operations vehicles)

Dec storm issues

- Highest red alert status never declared
- Preemptive service curtailments not effectively used as conditions degraded
- Failure of bus radio system interfered with operational communications
- Poor customer communications about bus service status

Completed improvements

- Created situation room for coordinating response to storms and other events
- Designated customer advocate in situation room to monitor stuck customers
- Modified radio system to improve robustness

Buses is also pursuing an action plan of additional improvements, most of which will be completed by next winter, including:

Operations

- Develop enhanced winter manual including alert levels aligned to prospective storm conditions and procedures for controlled service curtailment
- Develop improved radio communications strategy

Customer communication

- Develop outreach for proactively communicating potential service curtailments or “snow routes” to customers
- Continue deployment of Bus Time real-time customer information

Staffing

- Review and improve driver training curriculum on winter driving practices
- Develop procedures for mobilizing administrative staff in support roles during severe storms

Equipment

- Continue deployment of GPS tracking across bus fleet
- Continue evaluation and testing of fleet storm readiness and update procedures regarding tires and use of snow chains

Review of Paratransit performance in the December storm has resulted in a series of already-completed improvements

Dec storm strengths

- Paratransit storm center available to coordinate response
- Use of Automatic Vehicle Location Monitoring (AVLM) to track and communicate with drivers on the road
- Use of automatic calling system to alert customers to disruptions following storm

Dec storm issues

- Inability to set alert level independently of Buses
- Preemptive service curtailments not effectively used as conditions degraded
- Ineffective plans for rescuing customers
- Few 4-wheel drive vehicles available to field supervisors

Completed improvements

- Implemented independent setting of alert levels and service curtailments
- Introduced dashboard storm monitoring system to track stranded vehicles and customers, OEM notifications, and trip cancellations on half-hourly basis
- Introduced one-day-only advanced trip booking prior to forecasted storms
- Introduced protocols for only deploying vans in storms (better snow handling)

Paratransit is also pursuing an action plan of additional improvements, most of which will be completed by next winter, including:

Operations

- Develop Paratransit-specific Storm Action Plan including processes for curtailing non-medically essential service
- Coordinate with OEM and City agencies to develop improved procedures for rescuing stuck customers

Customer communication

- Launch Interactive Voice Response (IVR) customer calling system to aid in communicating service suspensions
- Work with media outlets to ensure that service status is communicated in a way that avoids confusion over paratransit in NY and NJ

Equipment

- Replace life-expired supervisor vehicles with 4-wheel drive vehicles, to enable field supervisors to operate in inclement road conditions

B&T had strong performance in the December storm and a series of actions is being undertaken to further improve storm readiness

Dec storm performance

- Early mobilization of storm response
- Uninterrupted availability of bridges and tunnels
- GPS-tracking of snow-fighting vehicles
- B&T snow-fighting vehicles used to assist Buses
- Quick assessment and assurance of fleet serviceability following storm

Completed improvements

- Updated storm management procedures, including formalized posting of Technology Department staff during severe storm mobilization
- Develop formalized procedure for providing snow-fighting equipment or other assistance to other Agencies during storms or other significant operating events

Planned improvements

- Include line items in future engineering contracts requiring contractors to provide snow removal assistance during severe storms