

# **Methodology: Straphangers Campaign Analysis of MTA Alerts of Subway Incidents/Delays in 2011 and 2013**

## **Overview**

This is the third annual NYPIRG Straphangers Campaign analysis of Metropolitan Transportation Authority service alerts of delay-generating incidents.

The MTA sends these alerts by text or email to riders who subscribe through its “Email and Text Message Alert System.” They are intended to provide up-to-the-minute information about whether a line or lines are experiencing a significant incident(s) that could lead to a delay – and whether riders should consider taking an alternate route. The alerts do not include a record of the length of the delay.

By subscribing to alerts for all 20 major subway lines (excepting the shuttles), the Straphangers Campaign obtained all incident alert data for 2011 and 2013. The Campaign was therefore able to analyze the information for that time period, including alerts of incidents/delays by subway line, by type of incident, and by borough.

We compared alerts in 2013 to those in 2011, because 2012’s numbers were greatly affected by superstorm Sandy, which struck in October 2012.

## **Background**

Since November 2008, the MTA has sent subway service alerts to those who subscribe to the MTA Email and Text Message Alert System. Announcing the alert system, the then MTA CEO Elliot G. Sander said:

“This is a revolutionary step that has the potential to transform the experience our customers have with us. If you know about a service disruption before you leave your home, or now, even as you are making your way to a subway or rail station or a bus stop, you can avoid the frustration of delays by seeking an alternate route.”<sup>1</sup>

Riders can sign up to receive these alerts at <http://www.mymtaalerts.com>.

The service is free, but a carrier’s standard text messaging rates may apply. About 105,000 individuals currently subscribe to the MTA’s alerts for subways and buses.

## **The Process**

In June 2011, the Straphangers Campaign wrote to New York City Transit requesting information on near real-time email and text alerts sent to riders. New York City Transit

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<sup>1</sup> “MTA Launches Text Messaging and Email Alert System, November 25, 2008.” <http://www.mta.info/press-release/mta-headquarters/mta-launches-text-messaging-and-email-alert-system>

responded that “Email alerts are issued for any incidents reported to Corporate Communications by Rapid Transit Operations (RTO) that will result in a significant service impact that is expected to last 8 to 10 minutes or more.”<sup>2</sup>

The response went on to say:

“There is nothing associated with the Rail Control Center (RCC) computer system to automatically determine which subway incidents are deemed significant, nor should there be. The decisions generated by the RCC for each incident are guided by written protocols and largely based on an assessment of the specific circumstances, the anticipated duration of the incident and the anticipated impact on service... Again, the email alerts that Corporate Communications issues are for any and all incidents with an anticipated duration of 8 to 10 minutes or longer.”

The Campaign followed up by requesting a copy of the referenced protocol. In December 2011, we received a New York City Transit directive further explaining the process for generating texts or emails to the public involves several steps.<sup>3</sup>

The process starts at New York City Transit’s Rail Control Center. The “Rapid Transit Operations Incident Notifications Board” must be updated whenever the following occurs:

- delays of 10 minutes or more during weekday rush hours;
- delays of 30 minutes or more or incidents causing “20 or more delays” during non-rush hours;
- significant incidents (collision, derailment, person hit by a train); and
- all inclement weather conditions.

Texts then are generated for these events – and also for “unusual incidents affecting service, such as a building collapse or off property fire.”

Second, personnel in Corporate Communications will “update the MTA Service Alerts website and generate a text message to the general public” for the following:

- significant service delays and alternate travel choices;
- police investigations causing delays to service;
- unscheduled service diversions;
- suspensions in service with alternate service choices; and
- resuming service after an incident.

Third, both notifications and texts must be approved the General Superintendent or Superintendent-in-Charge “to ensure accuracy and appropriateness of text messages.”

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<sup>2</sup> Letter from New York City Transit President Thomas Prendergast to Straphangers Campaign attorney Gene Russianoff, August 12, 2011.

<sup>3</sup> New York City Transit Rail Control Center, “Communication Desk Criteria for Internal/External Messages,” Directive 22-11, December 6, 2011.

New York City Transit provided the Campaign with an additional one-page undated memo from “Corporate Communications” entitled “Rail Control Center Protocols.” In several cases, that memo fleshes out what should be done for some incidents, although in no way contradicting Directive 22-11. For example:

- a confirmed person struck by a train (12-9) should be posted immediately as a “police investigation.” Updates should be made periodically as changes in service occur; and
- confirmed rail conditions (broken rail, signal/switch problems, AC power failures) should be posted as soon as it is apparent that a lengthy delay will occur.

Transit officials explained that while many significant incidents lead to sizeable delays, not all do. For example, some sick passenger incidents are lengthy, some are not. MTA alerts do not measure the duration of the incident. The letters/memos can be found at: <http://straphangers.org/alerts/attachments.pdf>

### **Organizing the Data**

As noted above, this analysis includes alerts of incidents for 20 subway lines sent by the MTA to subscribers between the dates January 1, 2013, 12:01 a.m. and December 31, 2013, 11:59 p.m.

We began with a total of 6,089 alerts for the period. Every alert was visually checked for accuracy and entered into an electronic spreadsheet for analysis.

Alerts were eliminated if they:

- made reference to bus service including local, express, and Select Bus Service;
- affect one of the three shuttles but not other subway services (Franklin Ave, 42nd Street, or Rockaway Shuttles); or
- only said that service had resumed.<sup>4</sup>

The remaining alerts were put into one of twelve categories of reasons for the delay. These included:

- **Signal:** Signal Problems, Signal Trouble
- **Switch:** Switch Problems, Switch Trouble
- **Rail:** Rail Condition
- **Track:** Track Problems, Debris on Tracks, Track Work, Track Maintenance, Emergency Track Work
- **Mechanical:** Mechanical Problems
- **Maintenance:** Maintenance, Station Maintenance, Emergency Work (without specifying what kind)

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<sup>4</sup> Alerts in the “other” category were eliminated from consideration. Examples of these alerts include: resumption of normal service, announcements of NYC events, planned service alerts and cancellation of planned service, debris on train, congestion, marine traffic, road construction, hanging wires/cables, and alerts pertaining to buses or the shuttles.

- **Power:** Loss of Power, Power Outage, Loss of Electrical Power, Electrical, Power Condition
- **Water:** Water Condition, Water Main Break
- **Smoke/Fire:** Smoke Conditions, Fire Department Activity, FDNY Activity, FDNY Activity at Street Level, Man Hole Fire, Track Fire
- **Medical:** Sick Customer or Passenger, Medical Assistance
- **Police:** Police Investigation, Police Activity, NYPD Activity
- **Weather:** Weather Conditions, such as "inclement weather," "winter weather advisory," "cold weather preparation," "snow related conditions," "winter storm watch," "cold weather conditions"

## Analyzing the Data

Our cleaning and organizing the data left us with 5,957 alerts of significant incidents to analyze.

First, we broke down the reasons for significant incidents into two groups, “controllable” and “uncontrollable.”<sup>5</sup> The Campaign decided that eliminating the incidents that were beyond the control of New York City Transit would hold subway officials to a fair level of accountability. Uncontrollable delays – such as police investigation are largely random and arbitrary in nature, while controllable delays are not.

We determined that seven of the twelve categories of significant incidents were largely under the control of transit officials. These “controllable” incidents were for: signals, switches, rail conditions, track conditions, mechanical problems, maintenance, and power.

Because the alerts are brief we could not make individual determinations within categories.

Five of the twelve incidents were determined not to be under the control of transit officials. These “uncontrollable” incidents were for: water conditions, smoke/fire, sick customers, police investigations, and weather conditions.

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<sup>5</sup> Prior to mid-2010, New York City Transit reported “on-time performance” (OTP) at its terminals in two ways, using the categories of “controllable” and “absolute.” The first was “absolute OTP.” That compared actual terminal arrivals to the “base” schedule for all trips – and took into account all delays for any reason. The second was “controllable OTP.” That compared actual terminal arrivals to the schedule in effect and excluded “delays charge to customers, police, etc.” New York City Transit concluded that these two different ways of reporting OTP were confusing. It is important to note that the Straphangers Campaign is reporting only controllable incidents in this analysis. In addition, according to the August 2011 New York City Transit letter, “There is no direct relationship between email alerts and the terminal on-time performance (OTP) figures reported publicly. The OTP that that is reported to the MTA Board is based on the tabulation of all the trains that arrive at the terminal more than five minutes late.... The MTA email alert system, by contrast, is based on incidents that are expected to have a significant passenger impact.”

Our cleaning and organizing the data left us with 3,998 alerts of significant controllable incidents/delays to analyze.

Second, we analyzed the data to calculate which of the city's 20 subway lines had the most and least total controllable significant incidents – and which lines fell in between – in 2013.

The Straphangers Campaign is posting a spreadsheet containing the data for alerts on our website in the hope that other researchers and application developers make good use of the data.

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