



CITY OF NEW YORK
OFFICE OF THE COMPTROLLER
SCOTT M. STRINGER

MARJORIE LANDA
DEPUTY COMPTROLLER FOR
AUDIT

BUREAU OF AUDIT

April 6, 2015

By Electronic Mail

Thomas F. Prendergast
Chairman and Chief Executive Officer
Metropolitan Transportation Authority
2 Broadway
New York, NY 10004

Re: **Letter Audit Report on the Wireless Voice and Data Service in New York City's
Subway System as Provided by Transit Wireless
(Audit Number SZ15-062AL)**

Dear Chairman Prendergast:

This Letter Report contains the findings of our audit of the Wireless Voice and Data Service in New York City's Subway System as provided by Transit Wireless ("TW"). The audit's objective was to determine whether the wireless voice and data communication system installed by TW within certain New York City subway stations (including platforms, mezzanines, and various points within public access passageways) operates effectively. This audit is the first in a series of audits of the ongoing installation of cellular and wireless services in the New York City subway system. We found that the wireless voice and data communications system installed in the 47 underground Manhattan subway stations we tested operates as intended.

Background

In 2007, following a request for proposals process, the Metropolitan Transportation Authority's ("MTA") Board awarded a license agreement to TW that granted an exclusive license to provide commercial cellular/PCS and Wi-Fi service in 277 underground subway stations. Under the agreement, TW acts as a neutral host, constructing the distributed antenna system within the stations (excluding the tunnels between stations) and sub-licenses rights to use that system to cellular carriers, Wi-Fi providers, and other network users.

TW installs equipment and antennas at each underground station to provide cellular and Wi-Fi coverage throughout public areas. The in-station equipment and antennas are linked by fiber optic cables to TW trunk fiber optic cables, which run through the streets and connect back to a base station hotel (hub) that houses the head-end equipment for TW, the cellular carriers, Wi-Fi providers, and New York City Transit ("NYCT").

TW reportedly installed the wireless network in 47 underground subway stations in Manhattan, including major station complexes such as Times Square and Grand Central, and is currently installing its network in 15 underground stations in Queens. All 277 underground stations in New York City are contractually required to be in service by the end of 2017.

Conclusion

We found that the wireless voice and data communication system currently installed by TW within the 47 subway stations we tested (including platforms, mezzanines, and various points within public access passageways) operates as intended. We recommend that the MTA, NYCT, and TW continue their current plan to provide voice and data service to the remaining 230 underground New York City subway stations.

Scope and Methodology

We conducted this performance audit in accordance with generally accepted government auditing standards (“GAGAS”). 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. This audit was conducted in accordance with the audit responsibilities of the City Comptroller as set forth in Chapter 5, §93, of the New York City Charter.

The scope period of this audit was July 14, 2014, through January 13, 2015. Our audit reviewed all 47 stations that were reportedly operational in our scope period.

To meet our objective, auditors equipped with laptops and cellular phones visited the 47 stations that were listed on NYCT and TW websites as having Wi-Fi service, established a Wi-Fi connection, and completed cellular calls (911 service was not tested). At each station location, auditors took screenshots showing Wi-Fi connectivity on the laptop and emailed them to Comptroller email addresses. Initial visits to the 47 stations took place on July 29 and 30, 2014, and August 7, 2014. Subsequent visits to stations were completed as of January 13, 2015.

To determine whether the voice (cellular) service was active, the auditors made phone calls to the Comptroller’s office and either spoke to other employees or left voice messages.

To determine whether the text messaging features were available, the auditors sent text messages to other cellular devices while in the train stations and on the train (if the next station was listed as being equipped with service).

To determine the accessibility of social media websites, the auditors downloaded Yahoo, Google and Facebook to cellular devices and attempted to read mail and send messages. The auditors also accessed Netflix and Pandora to determine if it was possible to continue watching movies, playing music, and streaming video. The auditors also used laptops to test social media

applications and video streaming while in the subway stations and on platforms.

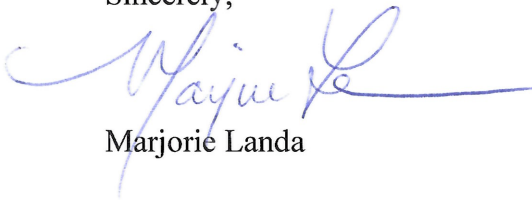
In order to determine which stations had been chosen to have wireless service during our scope period, we reviewed the MTA Board Action Items and station listings, as well as the MTA's and TW's websites.

Testing was performed Monday through Sunday at various times from 6 a.m. to 12 a.m. to ensure that Wi-Fi and cellular service were available. In addition, the auditors tested service in inclement weather to determine the effect on Wi-Fi and cellular service. (See Appendix I for listing of stations and services available.)

Based on our positive conclusion, we recommend that the MTA, NYCT, and TW continue their current plan to provide voice and data service to the remaining 230 underground New York City subway stations. On March 16, 2015, we submitted a draft letter report providing MTA and NYCT officials with the opportunity to formally respond. The MTA's and NYCT's responses were received on March 30, 2015. In their written responses, the MTA and NYCT agreed with the report.

The full text of the MTA's and NYCT's comments are included as addenda to this report.

Sincerely,



















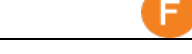








Marjorie Landa

c: Carmen Bianco, President, NYCT
Michael J. Fucilli, Auditor General, MTA
Darren Jurgens, Audit Manager, MTA
Mindy Tarlow, Director, Mayor's Office of Operations
George Davis III, Deputy Director, Mayor's Office of Operations

APPENDIX I

List of 47 Stations Tested

	Station Name	Line Tested	Dates Tested	Cellular Voice*	Cellular Voice	Social Media	Wi-Fi	Music/Video Streaming
1	8th Av		7/29/2014; 10/11/2014; 11/27/2014	YES	YES	YES	YES	YES
2	6th Av		7/29/2014; 10/11/2014; 11/27/2014	YES	YES	YES	YES	YES
3	23rd St		7/29/2014; 10/11/2014; 11/27/2014	YES	YES	YES	YES	YES
4	14th St		7/29/2014; 10/11/2014; 11/27/2014	YES	YES	YES	YES	YES
5	14th St		7/29/2014; 10/11/2014; 11/27/2014	YES	YES	YES	YES	YES
6	14th St		7/29/2014; 10/11/2014; 11/27/2014	YES	YES	YES	YES	YES
7	5th Ave		7/29/2014; 10/16/2014; 11/7/2014	YES	YES	YES	YES	YES
8	57th St		7/29/2014; 10/16/2014; 11/7/2014	YES	YES	YES	YES	YES
9	49th St		7/29/2014; 10/16/2014; 11/7/2014	YES	YES	YES	YES	YES
10	Times Square		7/29/2014; 10/16/2014; 11/7/2014	YES	YES	YES	YES	YES
11	28th St		7/29/2014; 10/16/2014; 11/7/2014	YES	YES	YES	YES	YES
12	23rd St		7/29/2014; 10/16/2014; 11/7/2014	YES	YES	YES	YES	YES
13	96th St		7/30/2014; 11/16/2014	YES	YES	YES	YES	YES
14	86th St		7/30/2014; 11/16/2014	YES	YES	YES	YES	YES
15	81st St		7/30/2014; 11/16/2014	YES	YES	YES	YES	YES
16	72nd St		7/30/2014; 11/16/2014	YES	YES	YES	YES	YES
17	59th St		7/30/2014; 11/16/2014	YES	YES	YES	YES	YES
18	50th St		8/7/2014; 11/1/2014; 11/10/2014	YES	YES	YES	YES	YES
19	42nd St		7/29/2014; 10/11/2014; 11/27/2014; 12/21/2014; 1/13/2015	YES	YES	YES	YES	YES
20	57th St		8/7/2014; 12/5/2014; 1/10/2015	YES	YES	YES	YES	YES
21	47-50 St Rock Ctr		8/7/2014; 12/5/2014; 1/10/2015	YES	YES	YES	YES	YES
22	5th Ave		8/7/2014; 12/5/2014	YES	YES	YES	YES	YES
23	7th Ave		8/7/2014; 12/5/2014	YES	YES	YES	YES	YES
24	96th St		7/30/2014; 9/14/2014; 11/18/2014	YES	YES	YES	YES	YES
25	86th St		7/30/2014; 9/14/2014; 11/18/2014	YES	YES	YES	YES	YES

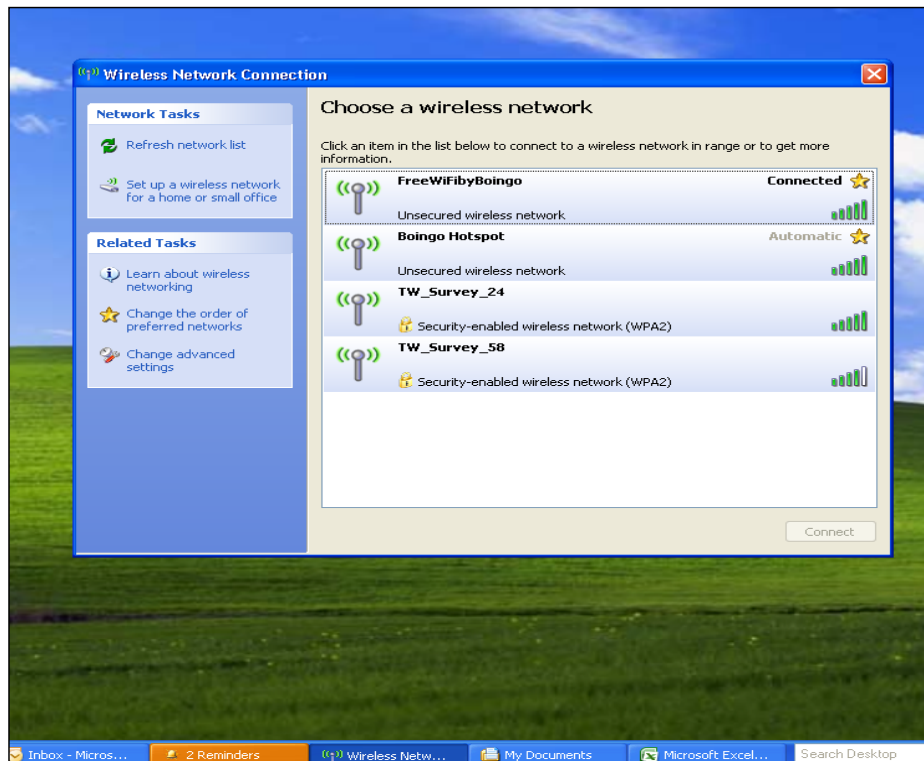
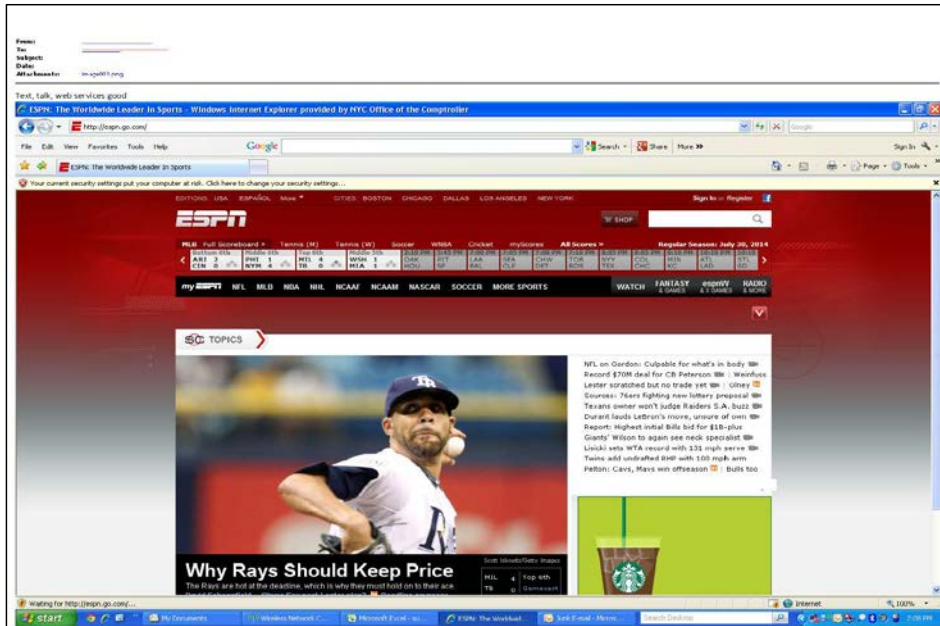
APPENDIX I

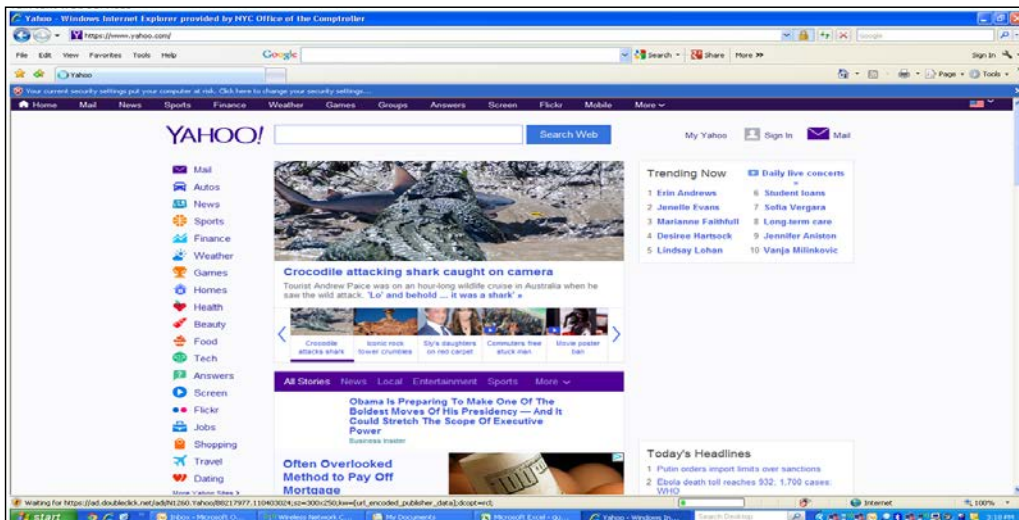
26	79th St	1	7/30/2014; 9/14/2014; 11/18/2014	YES	YES	YES	YES	YES
27	72nd St	1 2 3	7/30/2014; 9/14/2014; 11/18/2014	YES	YES	YES	YES	YES
28	66th St	1	7/30/2014; 9/14/2014; 11/18/2014	YES	YES	YES	YES	YES
29	59th St	1	7/30/2014; 9/14/2014; 11/18/2014	YES	YES	YES	YES	YES
30	50th St	1	7/30/2014; 9/14/2014; 11/18/2014	YES	YES	YES	YES	YES
31	Times Square	1 2 3	7/30/2014; 9/14/2014; 11/18/2014	YES	YES	YES	YES	YES
32	28th St	1	7/30/2014; 9/14/2014; 11/18/2014	YES	YES	YES	YES	YES
33	23rd St	1	7/30/2014; 9/14/2014; 11/18/2014	YES	YES	YES	YES	YES
34	18th St	1	7/30/2014; 9/14/2014; 11/18/2014	YES	YES	YES	YES	YES
35	Times Square	7	7/30/2014; 9/14/2014; 11/18/2014	YES	YES	YES	YES	YES
36	Times Square	S	7/30/2014; 9/14/2014; 11/18/2014	YES	YES	YES	YES	YES
37	34th St	N Q R	8/7/2014; 12/18/2014	YES	YES	YES	YES	YES
38	42nd St	B D F M	8/7/2014; 12/18/2014	YES	YES	YES	YES	YES
39	34th St	B D F M	8/7/2014; 12/18/2014; 1/7/2015	YES	YES	YES	YES	YES
40	23rd St	F M	8/7/2014; 12/18/2014; 1/7/2015	YES	YES	YES	YES	YES
41	Grand Central	4 5 6	8/7/2014; 12/18/2014; 1/9/2015	YES	YES	YES	YES	YES
42	33rd St	6	11/12/2014; 1/9/2015	YES	YES	YES	YES	YES
43	28th St	6	11/12/2014; 1/9/2015	YES	YES	YES	YES	YES
44	23rd St	6	11/12/2014; 1/9/2015	YES	YES	YES	YES	YES
45	Grand Central	7	7/29/2014; 10/11/2014; 1/8/2015	YES	YES	YES	YES	YES
46	5th Ave	7	7/29/2014; 10/11/2014; 1/8/2015	YES	YES	YES	YES	YES
47	Grand Central	S	7/29/2014; 10/11/2014; 1/8/2015	YES	YES	YES	YES	YES

*This listing includes stations that have AT&T, T-Mobile, Verizon Wireless, and Sprint service.

APPENDIX II

Screenshot Examples of Wi-Fi Connectivity, Email Communications, and Social Media







Metropolitan Transportation Authority

State of New York

March 30, 2015

Ms. Marjorie Landa
Deputy Comptroller for Audit
The Office of the City Comptroller
1 Centre Street
New York, NY 10038

**Re: Draft Letter Audit Report #SZ15-062AL (Wireless Voice and Data Service
in New York City's Subway System as Provided by Transit Wireless)**

Dear Ms. Landa:

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

I have attached for your information the comments of Carmen Bianco, President, NYC Transit, which address this report.

Sincerely,

A handwritten signature in black ink, appearing to read "T. F. Prendergast".

Thomas F. Prendergast
Chairman and Chief Executive Officer

Attachment



March 24, 2015

Mr. Thomas F. Prendergast
Chairman and Chief Executive Officer
Metropolitan Transportation Authority
2 Broadway, 20th Floor, Room A20.30
New York, New York 10004

Re: Draft Letter Audit Report on the Wireless Voice and Data Service in New York City's
Subway System as Provided by Transit Wireless (Audit Number SZ15-062AL)

Dear Chairman Prendergast:

MTA New York City Transit acknowledges and accepts the conclusion of the attached draft
audit of NYCT's Wireless Voice and Data Service.

Please note that we also acknowledge the continuation of the comptroller's testing of the
availability of wireless connections as we continue to install this service at all 277
underground stations.

Sincerely,

A handwritten signature in black ink, appearing to read "Carmen Bianco", written over the word "Sincerely,".

Carmen Bianco
President

cc: Michael J. Fucilli
Darren Jurgens
Mindy Tarlow
George Davis III
Frederick E. Smith