

# *New York City Transit*

## *Connecting with Transit Customers for the 21<sup>st</sup> century*



Andrew Bata  
Strategic Improvements and Best Practices  
MTA – NYC Transit

# New York MTA: At a Glance

- 8.5 million daily passenger trips (metro, bus, regional rail)
- MTA carries 2/3 of all rail riders in USA
- Regional transportation infrastructure
  - 735 rail and subway stations
  - 8,663 rail and subway cars
  - 3294 km of rail and subway track
  - 5238 km of bus routes



30% of all transit rides in U.S.A

Metro North  
Railroad

Long Island  
Rail Road

New York  
City Transit



# New York City Transit Fast Facts



- 24/7 continuous service since 1904
- 2.3 billion transit riders annually
  - 50% increase over last 20 years
- 26 metro (subway) routes
- Largest accessible and hybrid electric bus fleet worldwide
- 45,000 employees
- 56 railyards, maintenance shops and bus depots

# GRAND CENTRAL. ONE HUNDRED YEARS IN THE MAKING.



GRAND CENTRAL  
100 YEARS



Metro-North Railroad

# Grand Central Terminal Centennial Celebration



New York City

# Terminal City

## *Development and Air-rights*

- 1903-1913 - one of the world's largest projects
- \$80 million financed by air rights - "taking wealth from the air"

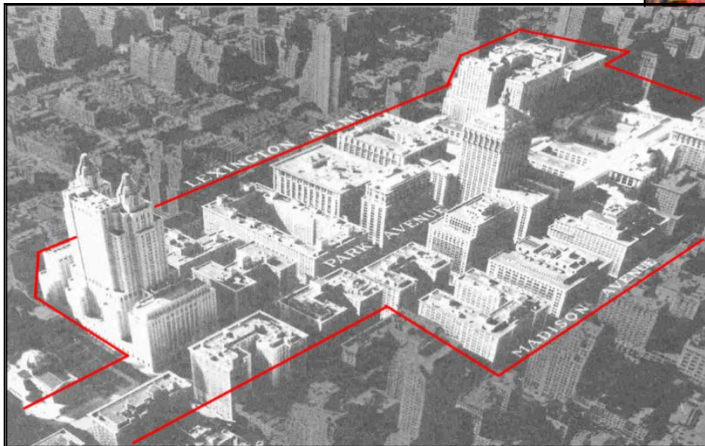


- Two levels of electric train operations
- 48 acres excavated

# Grand Central Terminal

## *Opens February 1913*

- Midtown Manhattan Development boomed
- Hotels for arriving passengers
- Subways, buses, taxis, pedestrians



# Grand Central Terminal

## *Birth of a New Railroad - Metro-North 1983*

- 5 train lines, 121 train stations, 345 route miles
- 760 trains per day
- Largest regional railroad in the U.S.
  - From 45 million per year to 83 million riders in 2012
- On time performance – 80% in 1983, 97.6% in 2012
- World's largest station by number of its 44 platforms



# Grand Central Terminal

## *Saving a Landmark*

- Rail use decreased as airport and highway use grew—1950's
- Proposal to tear terminal down—1960's
- Jacqueline Kennedy Onassis fought to save Grand Central
- Designated a landmark
- Neglected Terminal was dark, dirty, ugly and unsafe



# Grand Central Terminal

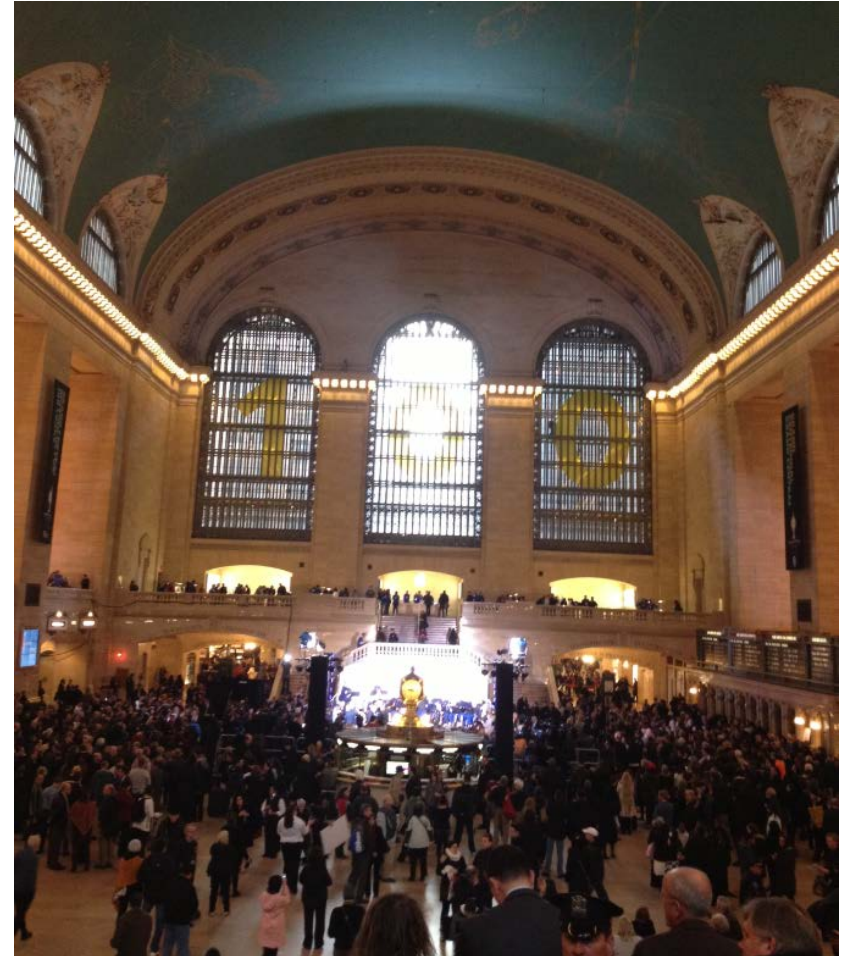
## *A New Railroad, A New Beginning*

- \$500 million Revitalization Plan
- Ceiling restoration
- Rededication 1998



# Grand Central Terminal

## *Celebrating 100 Years - February 1, 2013*



# Grand Central Terminal

## *Enhancements and Growth*

- 100 retail stores and restaurants + Apple Store
- One of the most successful retail centers in the U.S.
  - \$20 million net per year
  - Rents - \$300 to \$900 square foot per year
- Vanderbilt Hall now is a repurposed special venues room
  - \$2.75 million in revenue, 66 events in 2012
- Number 2 tourist destination in New York City



# Future of Grand Central Terminal

## *East Side Access Brings LIRR into Grand Central*

- 160,000 passengers
- Tunnels 120 feet below street
- Cost : \$8 billion
- 22,000 square feet of retail
- 46 escalators and 13 elevators

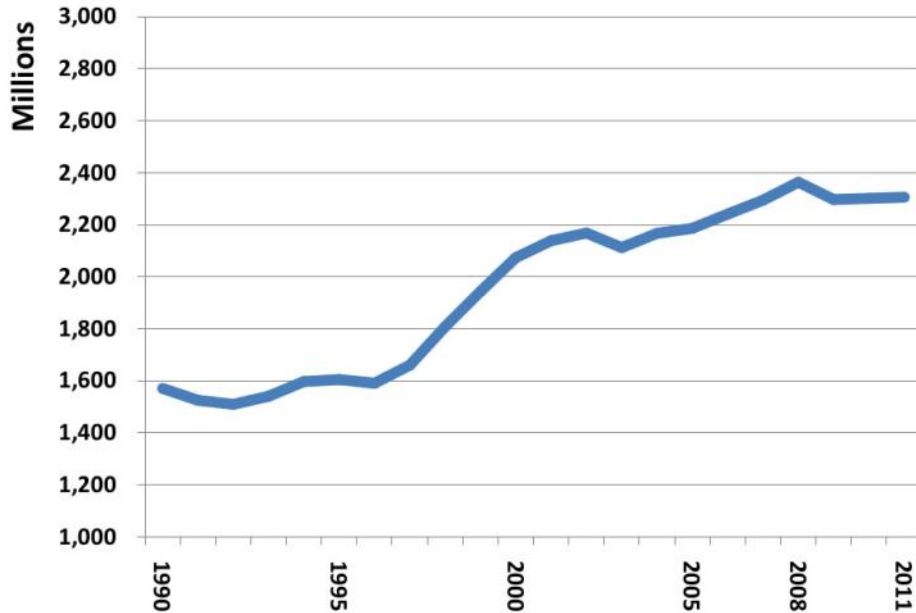


## Yes, in the USA... Emerging Two New Transit Markets

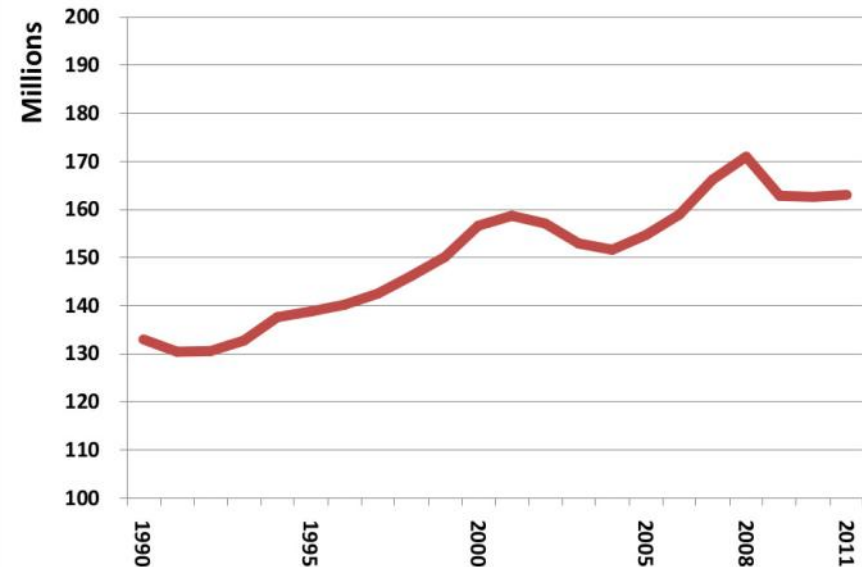
- Post WWII “Baby boomer” generation – *aging youthfully* 😊
- Millenials – born after 1980
- Both groups want to drive **LESS**

*...and their numbers are growing...*

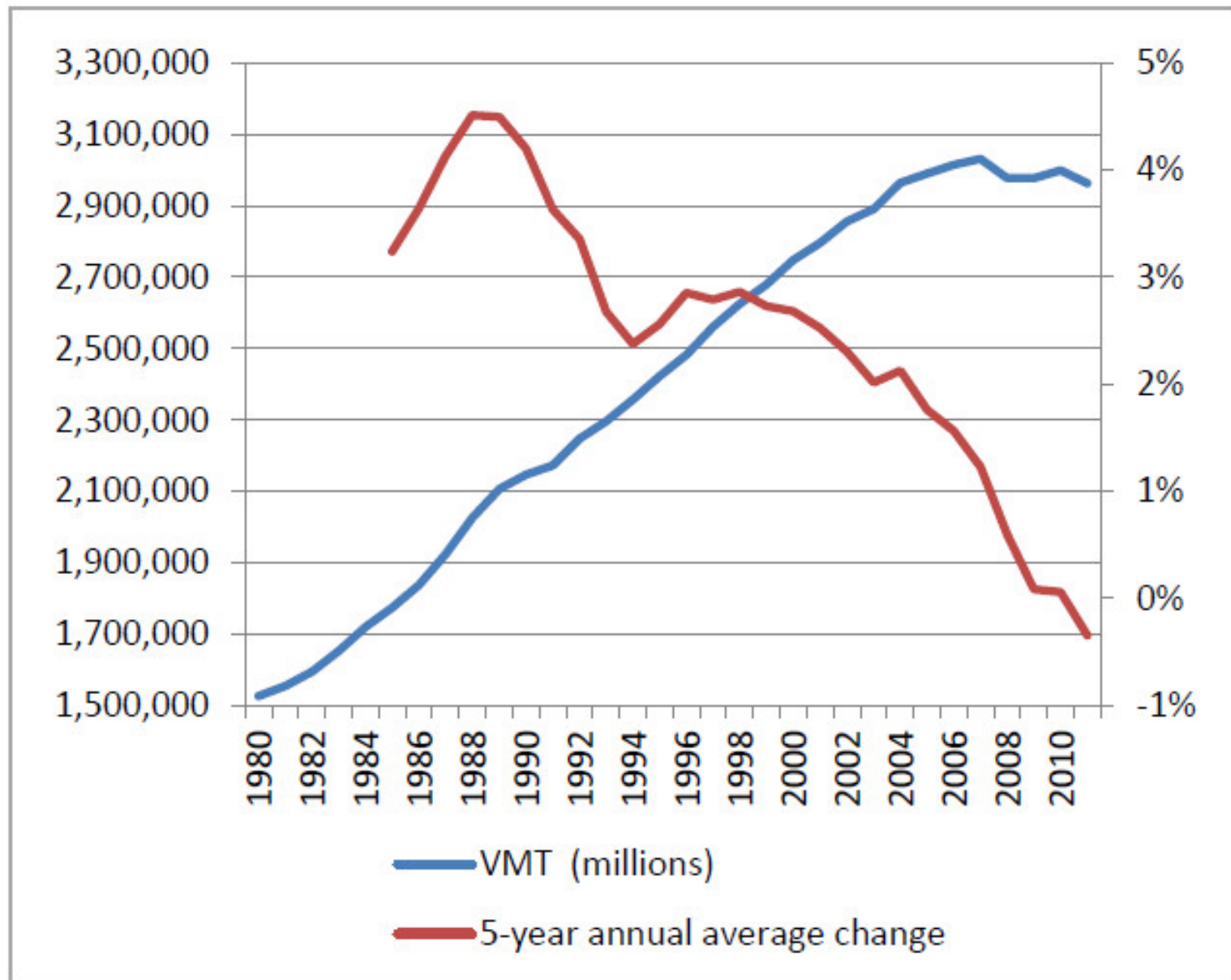
**Subway/Bus Ridership Growth**



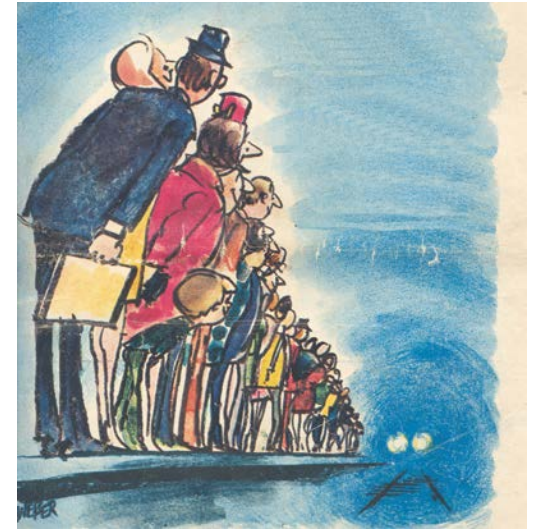
**Commuter Rail Ridership Growth**



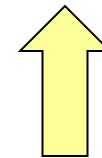
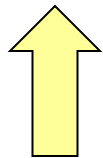
*...while auto usage is tapering off nationwide*



***Travel in the New York Region has changed from  
the  
9 to 5 commute to Manhattan...***



*Our customers now travel more mid-day,  
late nights and weekends...*



**Williamsburg, Brooklyn  
L Train – 2 am!**

# East Side Manhattan Congestion

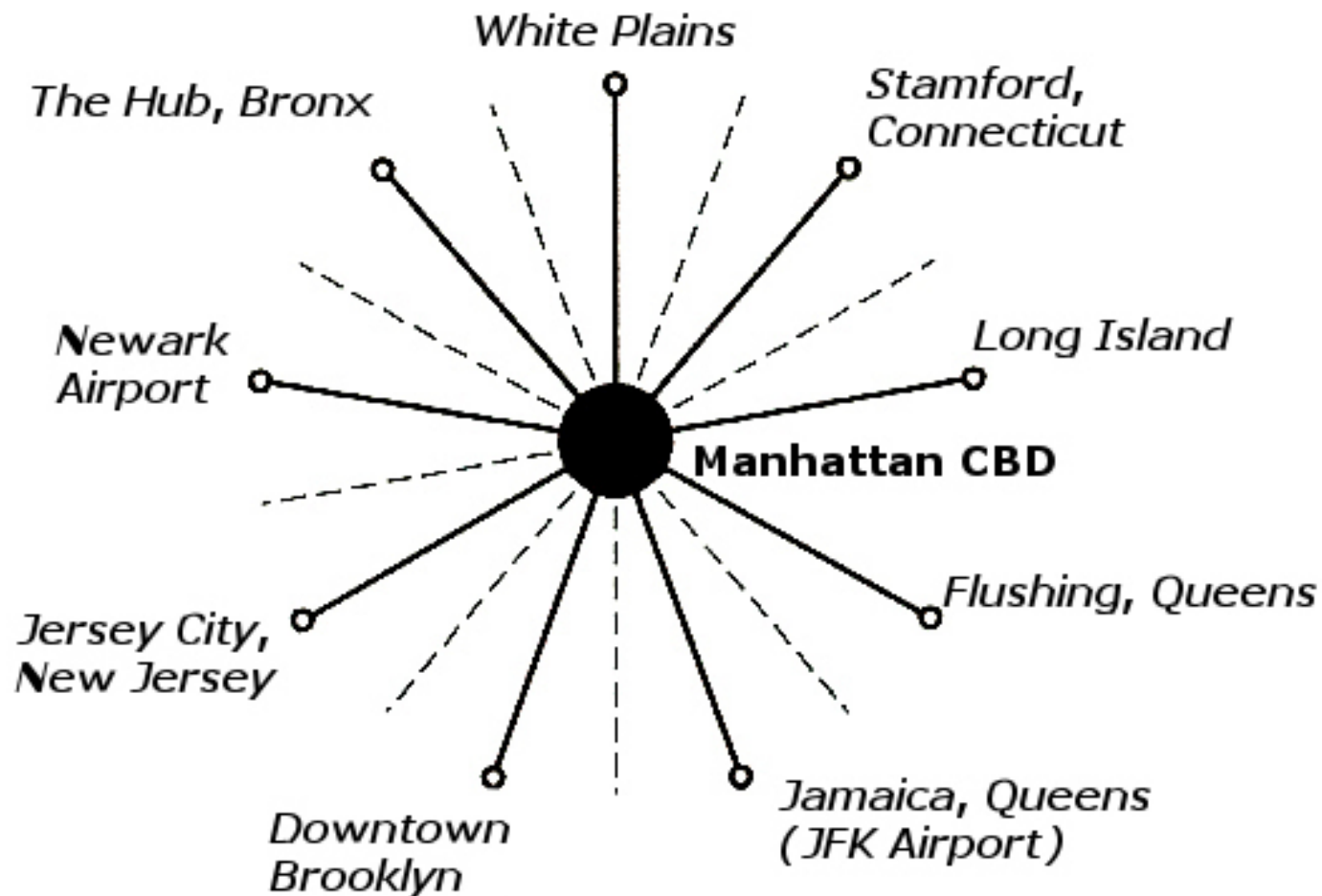
- Lexington Line carries more than 1.3 million passengers a day
- Line at physical capacity, overcrowding leading to delays

**More ridership than entire  
Washington Metro!**



# Current Network

- Central Core with legs spanning out from Manhattan CBD



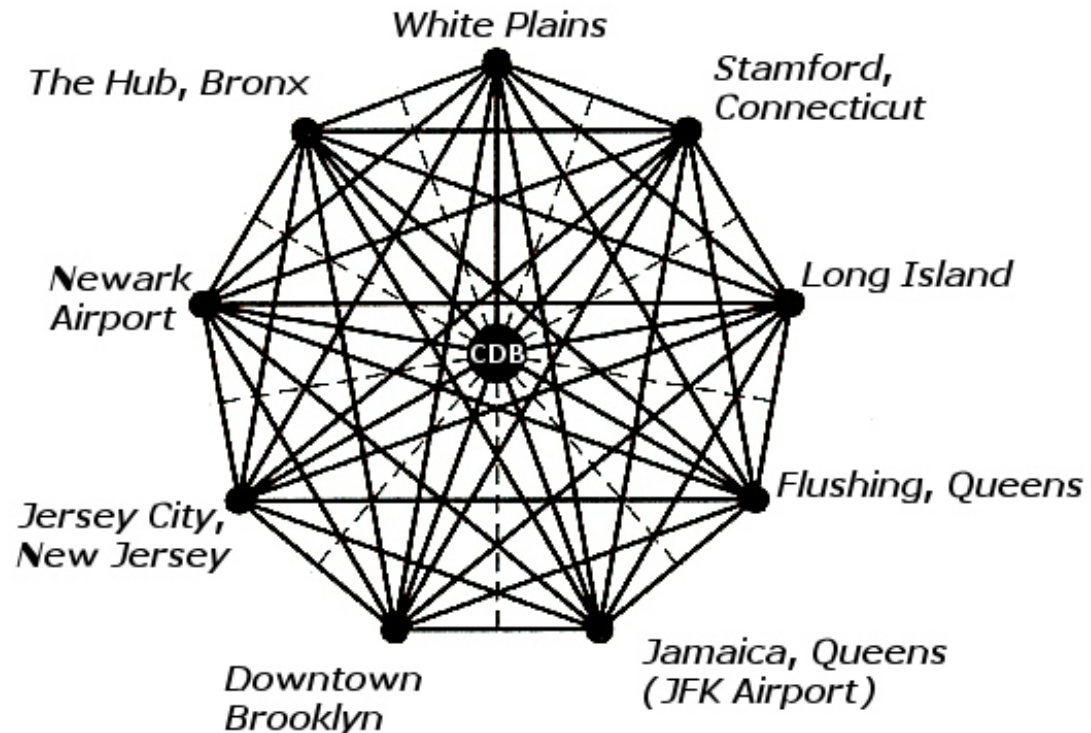
# Future MTA

## ***Improved service for:***

- borough to borough commuting
- suburb to suburb commuting
- Increased round the clock travel needs

## ***Serving a more livable city:***

- Bicycling
  - 5% mode share goal
- Pedestrian-friendly

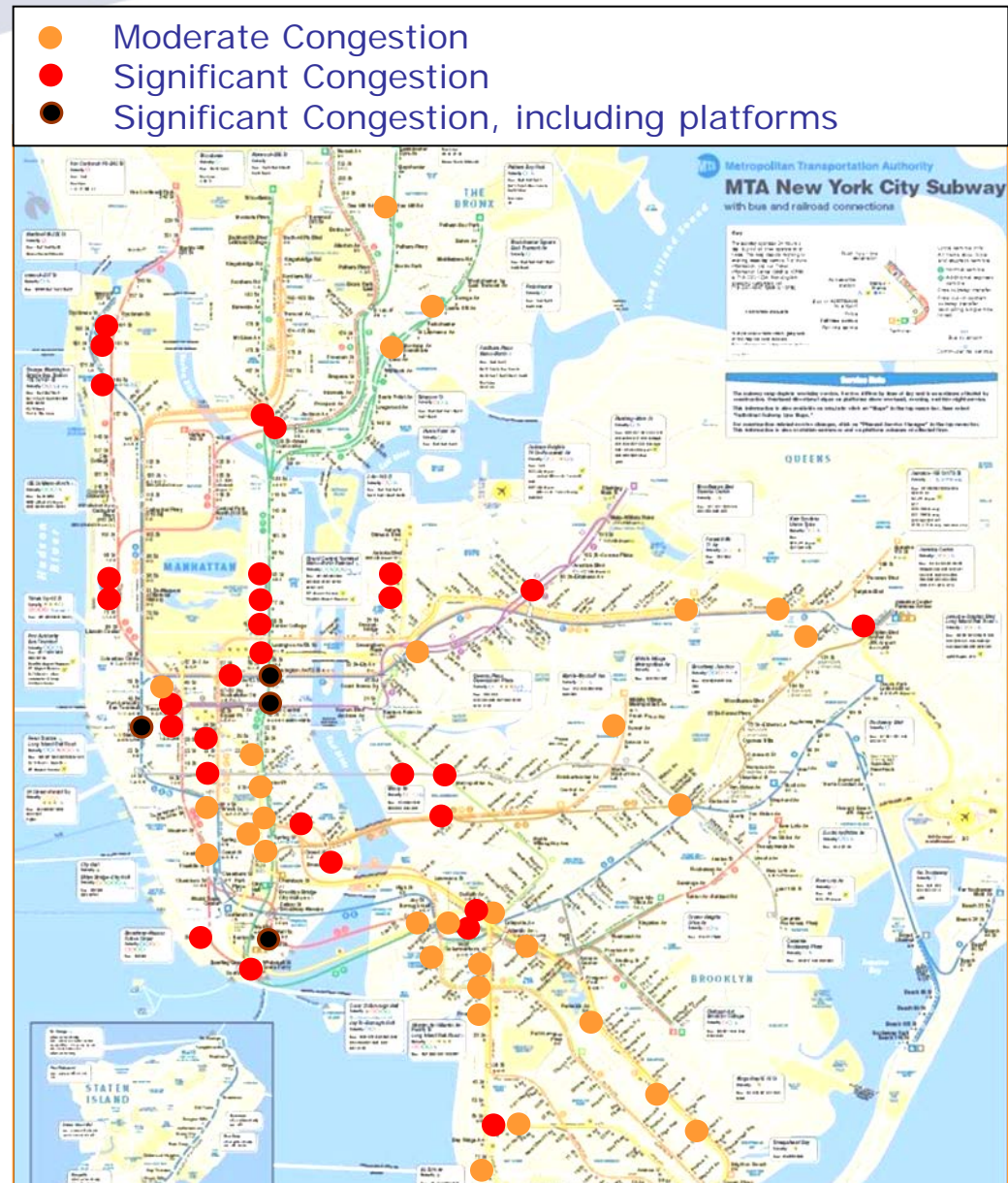


# Current Capacity Issues and Solutions



# Stations have capacity problems

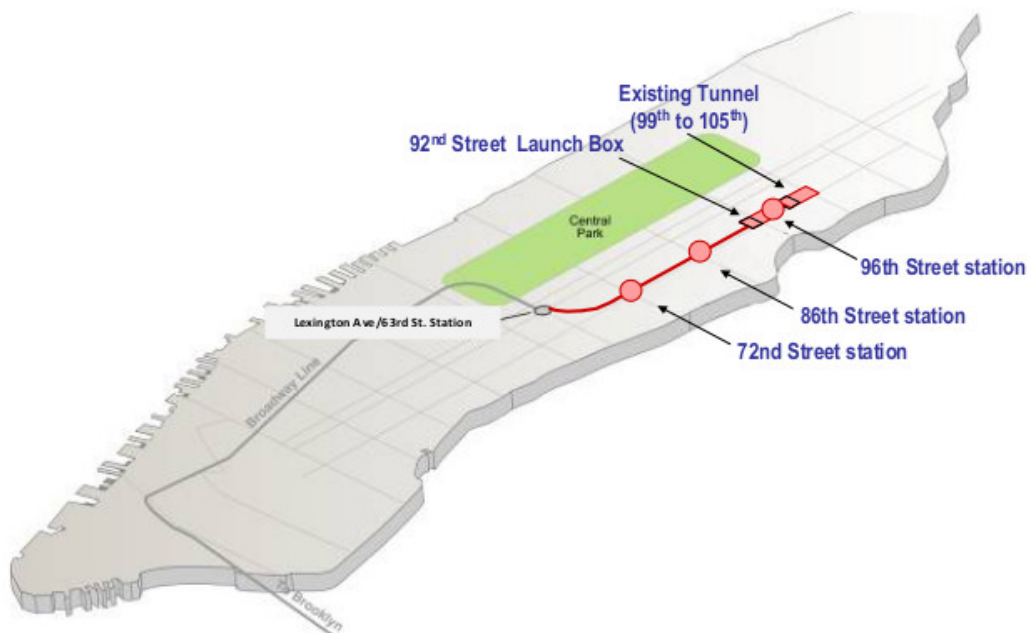
- Congestion at stairways and platforms
- Many stations in the CBD and key transfer points are experiencing significant congestion



# Short Term Solutions for East Side Manhattan

## Second Avenue Subway Phase I

- Relieves significant congestion on Upper East Side of Manhattan



## M15 Select Bus Service

- BRT service viable alternative to subway



# Long Term Solutions for East Side Manhattan

- Full Length Second Avenue Subway

- Articulated trainsets
- Increased automation

- Improved bus service

- Traffic signal prioritization
- Full time dedicated lanes
- Level boarding
- Contactless payment system



# Long Term Regional Solutions

- Complete existing megaprojects
  - 7 West
  - First Phase Second Avenue
  - East Side Access
  - Fulton Center
- Relieve corridors where congestion is increasing
  - Queens Blvd, Upper West Side
  - Full Length Second Avenue Subway
- Optimize Commuter Rail branches and ROW's
  - New in-city stations
- Commuter Rail regional thru-running
  - New Jersey to Connecticut
  - Upstate New York to Long Island



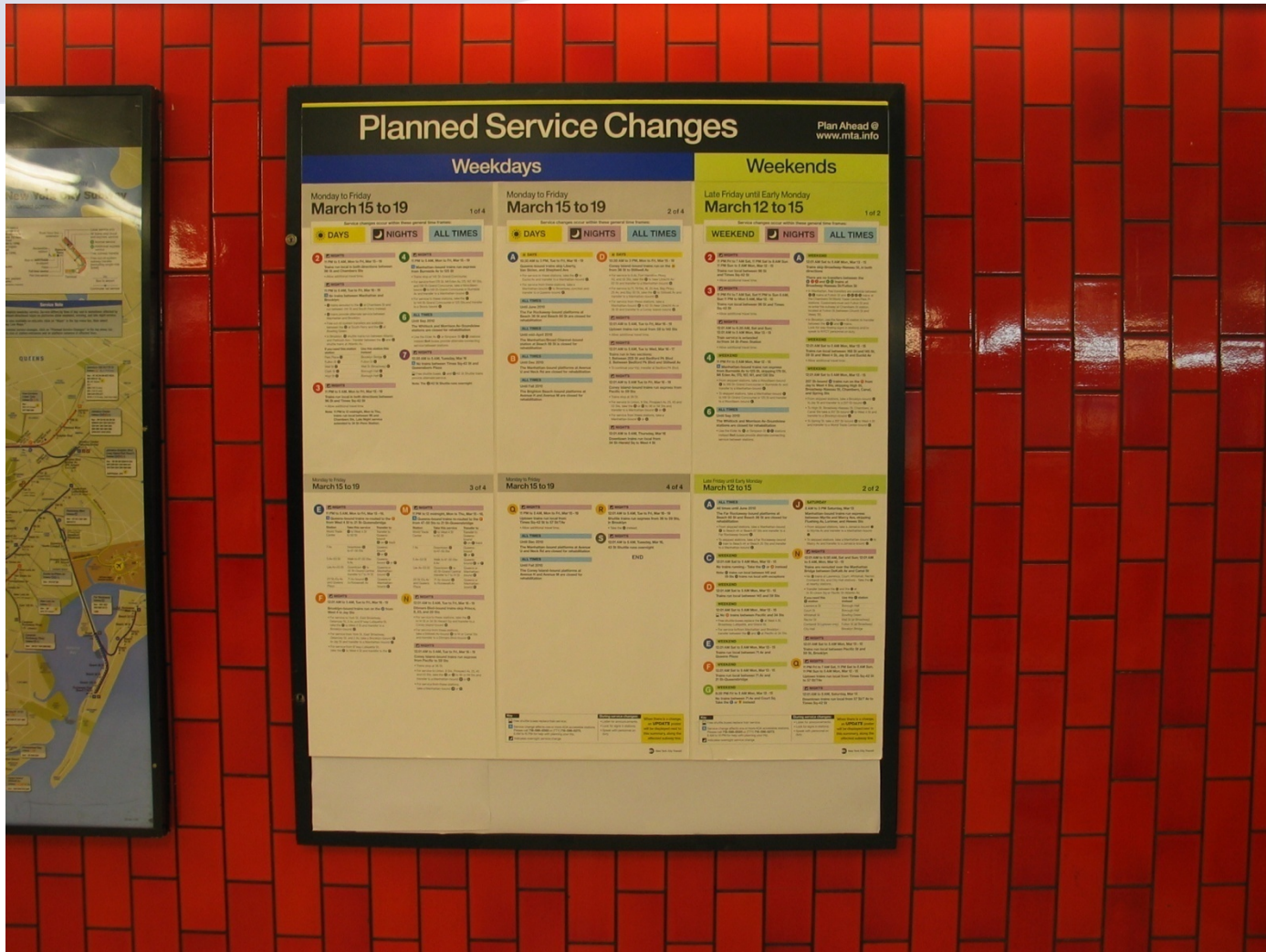
# Customer Communication

- 20<sup>th</sup> Century – Static signage, paper schedules
- 21<sup>st</sup> century – Interactivity, two way communication, personal customization, REAL TIME!
- People want to know what they need to know and don't care about things that are irrelevant *to them*

# Past



# Present



# Future - evolving



## *On The Go!* – Project Goals

- Improve customer communication via better access to relevant data
- Replace paper signage
- Create device that can interact with customers in a known format (e.g. touch screen interface)
- Potential for revenue generation
- Positive image of MTA network

# What Is it?

- *On The Go!* is an interactive, touch screen, digital information center
  - Trip Planning
  - Real-time service
  - Local maps
  - Service diversions
  - Shopping/dining
  - (3<sup>rd</sup> party apps)
- Like a giant iPad
- But even better!

New York City Transit



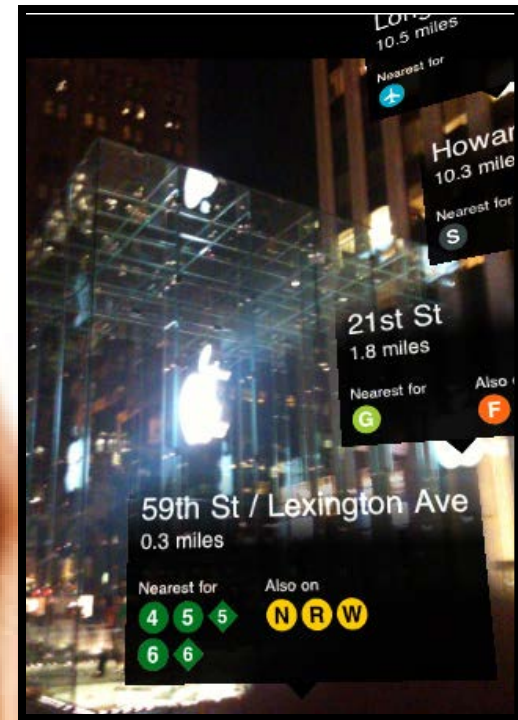
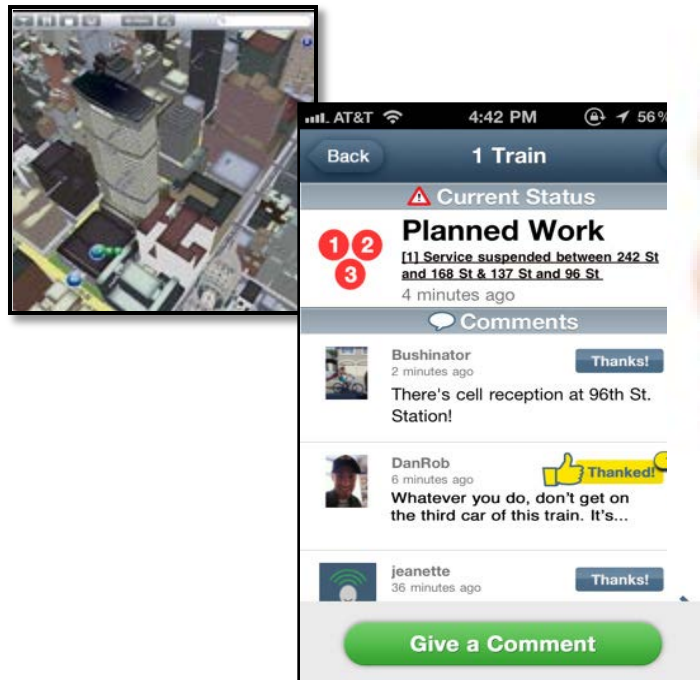
# On the Go

## Third Party Applications:

More than 130 third-party applications created with MTA data

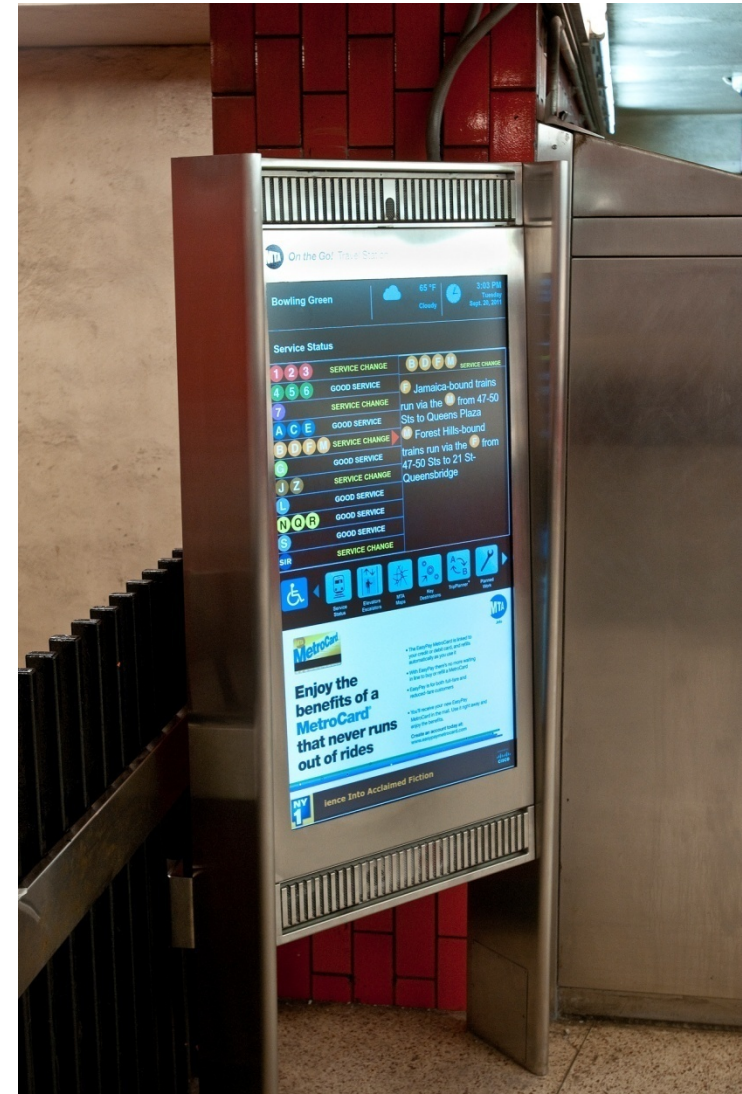
Variety of uses for trip planning, information and fun

Estimated 1,00,000+ users



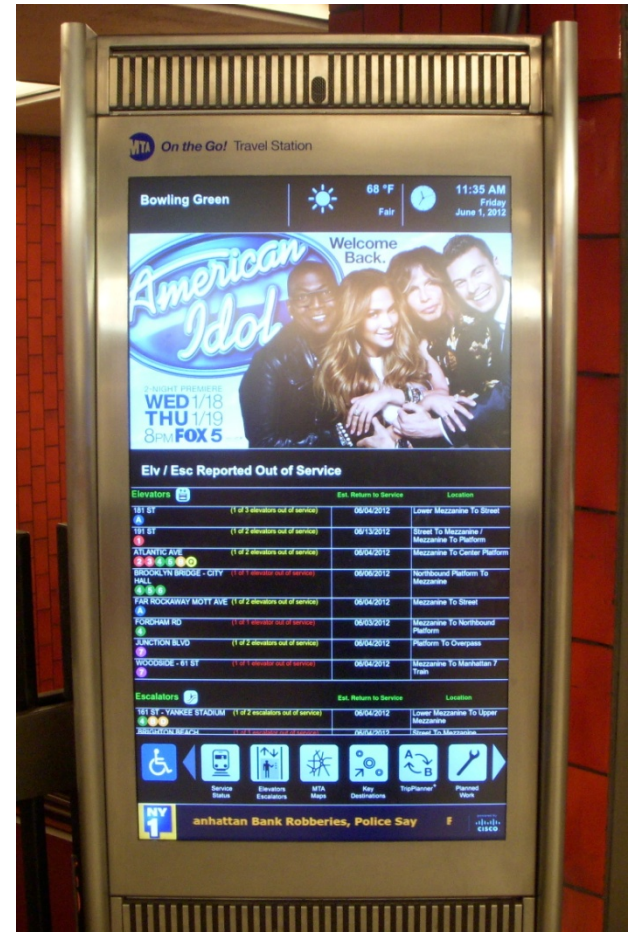
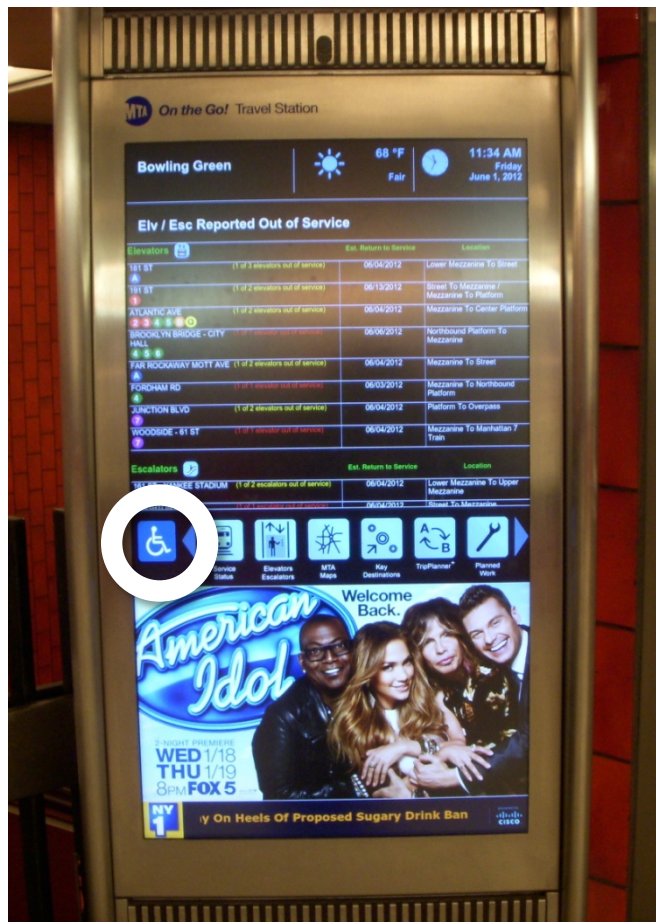
# Design Features

- Award winning sleek, stainless steel design
- 47 inch 1080p touch screen
- Video camera and microphone
- Easy Maintenance



# Accessibility Features

- Application window on top for standing customers
- Press accessibility button, and application window moves to the bottom for people in wheelchairs



# Revenue Generation Potential

- Wide Expression of Interest from Media
- Public/Private Partnership
- Kiosks to pay for themselves over time advertising
- Potential for highly-customized national, local and hyperlocal advertising

New York City Transit

The kiosk display is divided into several sections. At the top, it shows the location 'Jackson Heights Roosevelt Av', weather '61 °F Cloudy', and time '8:25 AM Monday June 4, 2012'. Below this is a 'Service Status' section with tabs for 'Subway', 'LIRR', and 'MNR'. The 'Subway' tab is active, showing a list of lines and their status: 1, 2, 3, 4, 5, 6, 7, A, C, E, B, D, F, M, G, J, Z, L, N, Q, R, S, and SIR, all marked as 'GOOD SERVICE'. To the right of the service status is a graphic of a person offering a seat to another person, with the text 'Please Offer a Seat (It's not only polite, it's the law.)' and a quote from the Americans with Disabilities Act. Below the service status and the 'Please Offer a Seat' message is a row of icons for accessibility, neighborhood map, departures, and myCiti app. At the bottom of the kiosk is a large advertisement for the TV show 'New Girl', featuring the cast members and the text 'ALL-NEW tuesday 9PM FOX 5' and 'BEST NEW COMEDY'.

# Innovations on Station Platforms and Trains

- Caring for customers along their trips
- Attractive design – both physical and content
- Rapid emergency and travel information assistance

# Before paying the fare

- Real time service status screens – snapshot status of entire system



# Before paying the fare

- Countdown clocks  
list arrival time of next trains  
linked to public address system



## Social Media:

- “Instant connectivity”
- Tremendous growth
- Demands attention, frequent updates

facebook

Email or Phone  Log In

☐ Keep me logged in

**MTA New York City Transit is on Facebook.**

To connect with MTA New York City Transit, sign up for Facebook today.

[Sign Up](#) [Log In](#)



**MTA New York City Transit**

8,222 likes · 202 talking about this

Local Business  
<http://www.mta.info/nyct>

About Photos Likes

Highlights ▾

 **MTA New York City Transit**  
about an hour ago

Front-Facing Advertising was unveiled on MetroCards this week. Click here for all the details: <http://mta.info/news/stories/?story=834>

Like · Comment · Share 1

Andrew Fletcher, David M. Logan and 2 others like this.

View all 5 comments

 **Christoph Steinhauser** Y'all should check Washington DC subway fares if u think NYC is expensive...  
about an hour ago via mobile

 **MTA New York City Transit** shared a link.  
October 5

Also On

<http://www.mta.info/nyct>

Recent Posts by Others on MTA New York City Transit See All

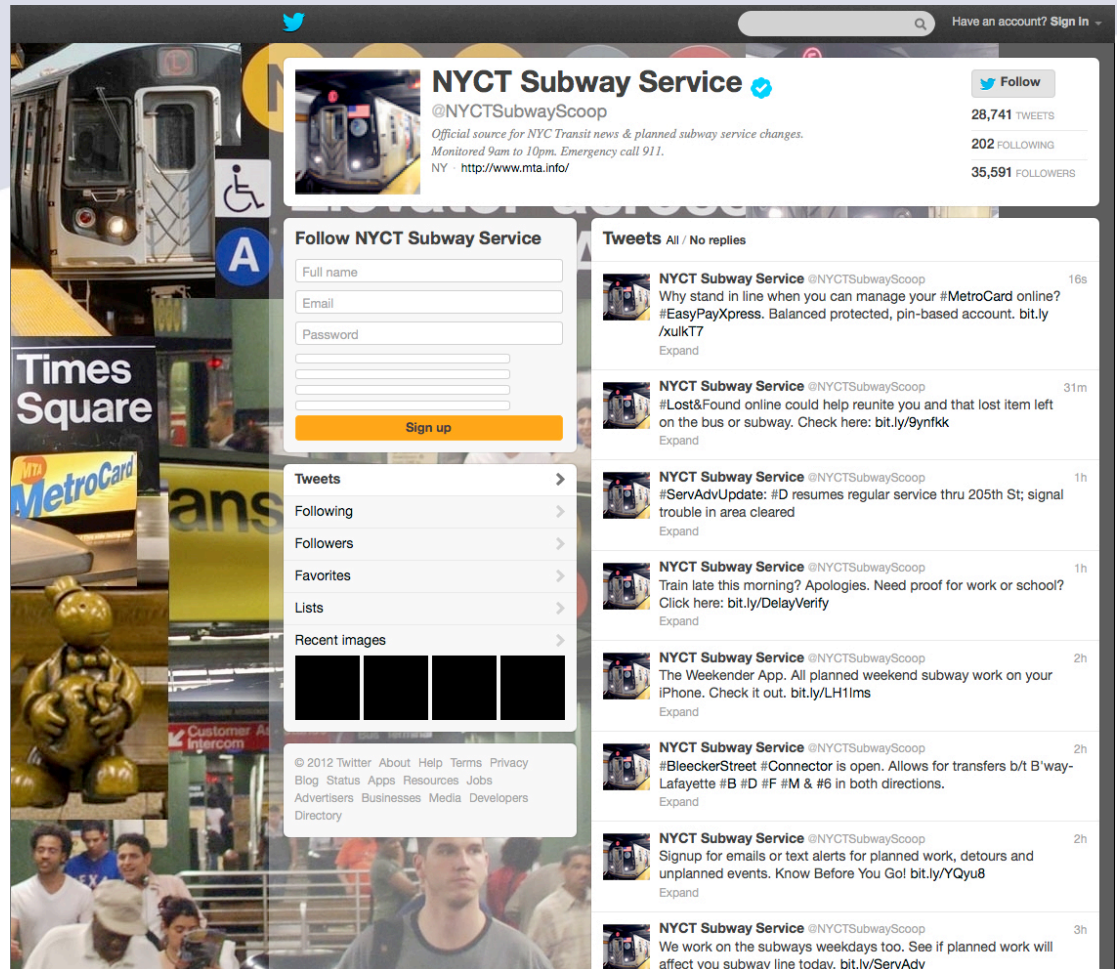
 **Rad Mom Cool Kid**  
My first time to New York was a success, once I figure  
Tuesday at 3:46pm

 **Julie Piracha**  
Dear MTA: Please turn off the AC. Summer officially ends  
Monday at 5:22pm

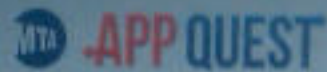
 **Eli Buck**  
This weekend, there were two shuttle buses for the 7 tra  
Monday at 10:04am

 **Catherine Gasta**  
Time it takes to get to Brooklyn on a 2 train from Manha

# Social Media: Twitter



- More than 90,000 followers
- Mix of service updates and fun features
- 24/7 coverage, business-hour responses



# What's next? 42 apps to make getting there even easier.



Eckman, MTA



Free MTA Subway Locator



MTA MTA MTA



CityMapper



MTA Metro-North

MTA App Quest is a software challenge that generated exciting new transit apps. Find them all at [mtaAppQuest.com](http://mtaAppQuest.com).

# On the train

## FIND Signs

- Offers total flexibility by line
- Displays next 10 stops and last stop on line
- Screen for video content



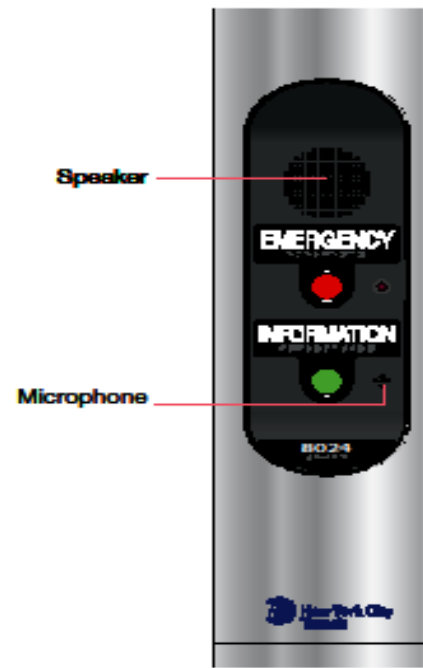
# While waiting on the platform



## Help Point

Two button communication device for customers to get in touch with MTA personnel – information and emergency

- pilot completed
- all stations to be outfitted by 2015



# MTA & Social Media

- Primary communication channels about MTA service, facilities and plans.

mta.info site

Social Media

Press/Media – pro active engagement

YouTube and Flickr

Digital Urban Panels

On the Go Station Kiosks

E-mail/Text Alerts

Continuous communication facilitated before, during and after Sandy

The screenshot shows the MTA Service Advisory website. At the top is the MTA logo and navigation links: Home, Schedules, Fares & Tolls, Maps, Planned Service Changes, MTA Info, Doing Business With Us, and Transparency. Below the navigation bar is the 'MTA Service Advisory' section. It includes a 'Service Status' table as of 7:54:56 AM, listing various subway lines (1, 2, 3, 4, 5, 6, 7, A, C, E, B, D, F, M, G, J, Z, L, N, Q, R, S, 34B) and their status (Service Change, Delays, Good Service). To the right of the table is a 'Useful Links' section with links to TripPlanner+, nyc.gov, AirTrain, PATH, Amtrak, and About This Website. Below the links is the 'MTA Travel Time' section with links to MTA Subway Time™ and MTA Bus Time®. On the right side of the page, there is a 'Increased Service Available For Monday AM Rush, Storm Clean Up Continues' article, an 'On Scene' photo of snow-covered tracks, and a 'Follow Us' section with social media icons for Facebook, Twitter, YouTube, and Flickr. At the bottom right is an 'AccuWeather.com' widget showing the current weather in New York City (39°F, Rain) and a forecast for the next few days.



# Personalized Customer Service



outdated...

**functional AND service oriented!**



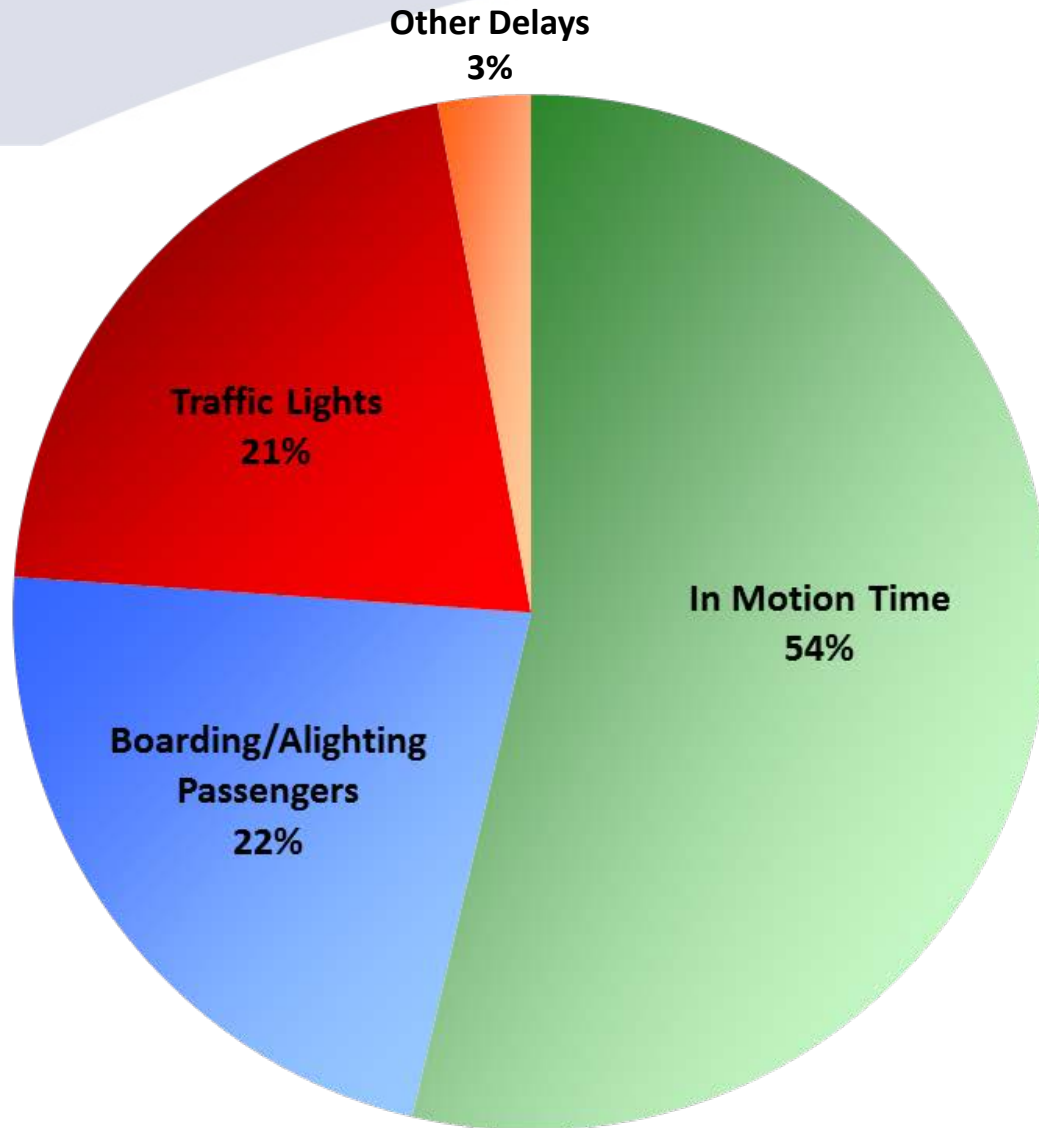
Fill in

# Building trust with customers

station management office, Barcelona



# ***Sources of Bus Delay***



# What's in a name?

## "Select Bus Service"



+selectbusservice | South Ferry

# Pre-Payment



# Bus Lane Cameras



# ***SBS Results***

## ***First and Second Avenues***



### First Avenue/Second Avenue:

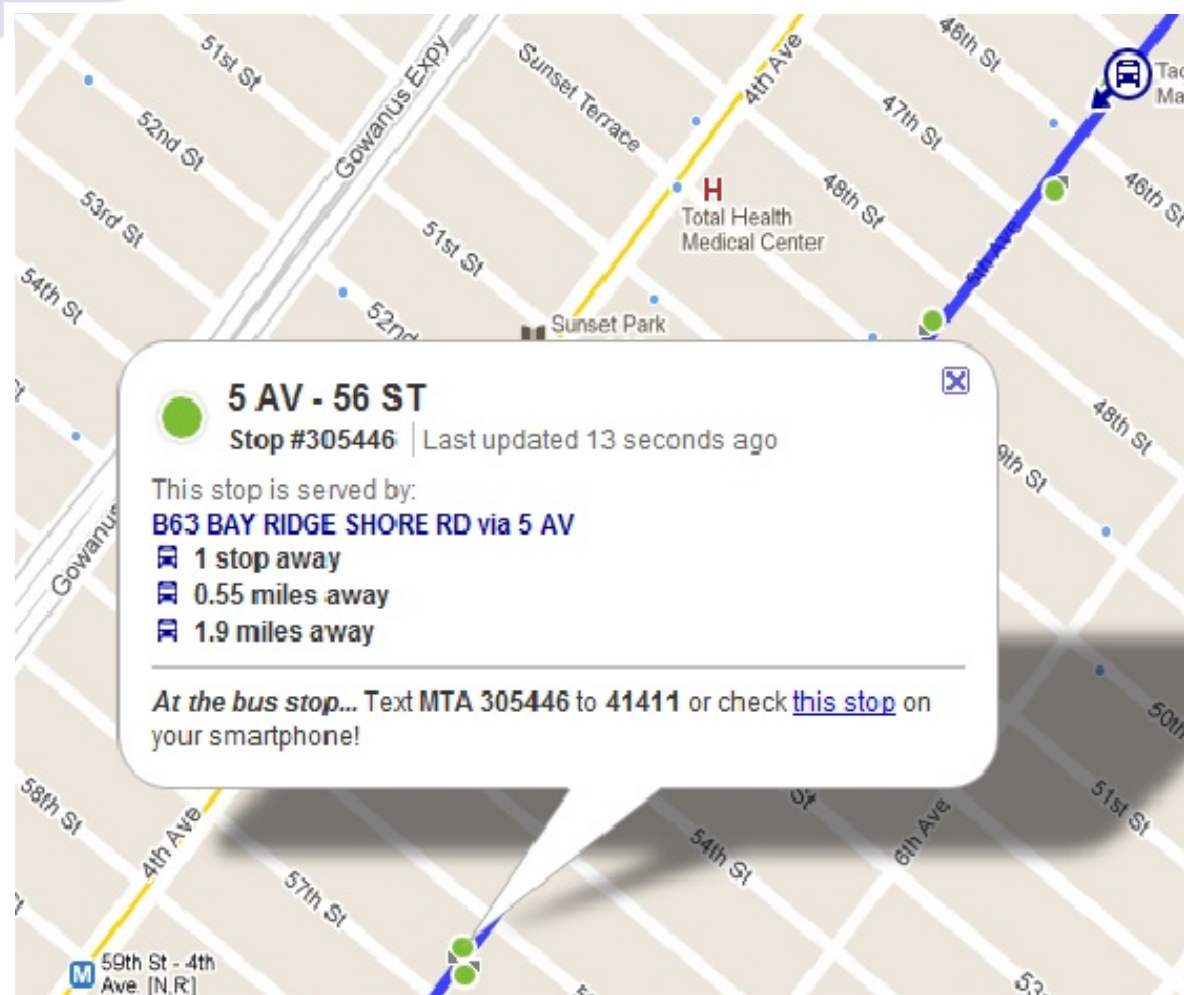
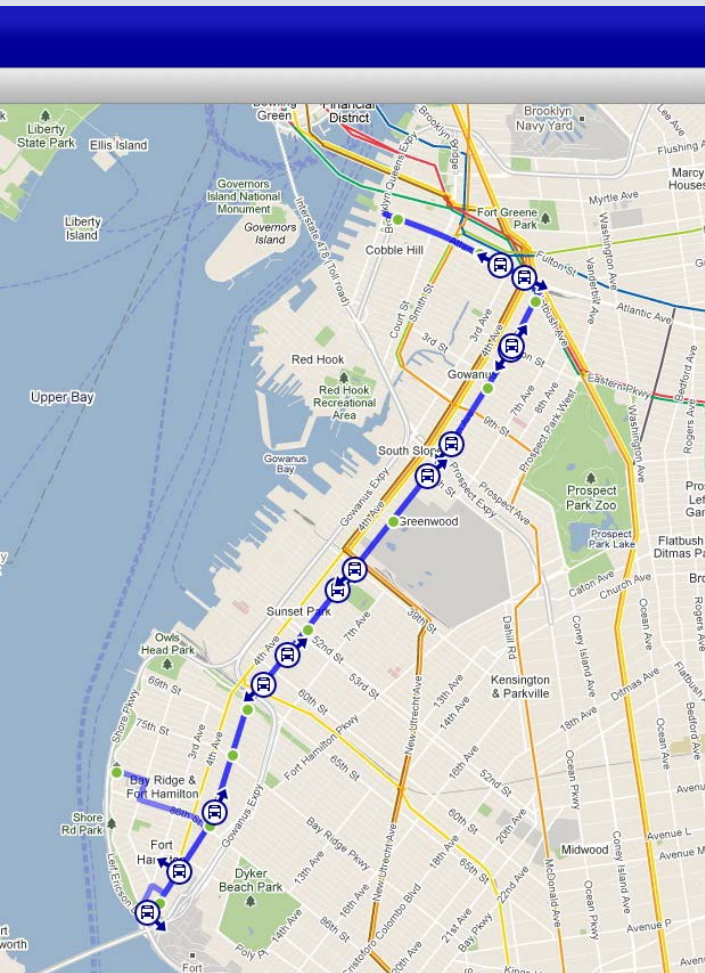
- New/Upgraded bus lanes
- Off-board fare collection
- New low-floor 3-door buses
- Integration with bicycle network
- Simplified Service Design

### Implemented October 2010

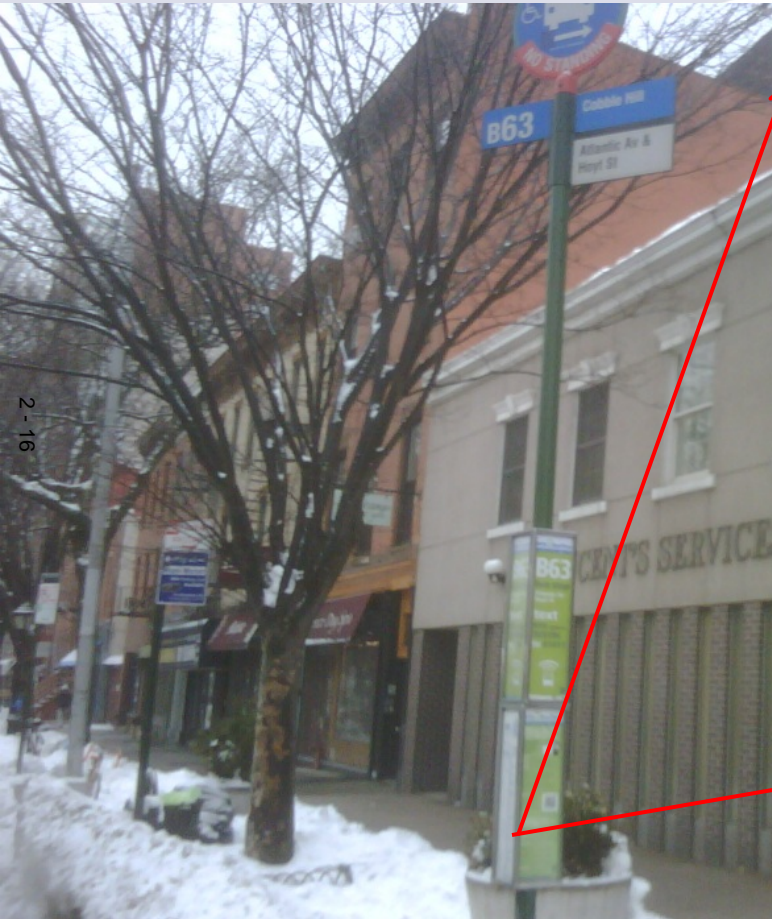
- **57,000** daily riders
- **15-18%** reduction in travel time
- **10%** increase in ridership
- **~\$10M** implementation cost
- Bus bulbs, TSP, **~\$10M** additional



# MTA Bus Time – Website Access – Map/Stop



# MTA Bus Time – Quick Response (QR) Code Access



**Scan it.** If you have a smartphone with a Quick Response (QR) reader, just scan this QR code and get connected to the MTA BusTime website.



Quick Response (QR) Code  
Código de respuesta rápida (QR)

Web site for particular stop, eg:  
<http://bustime.mta.info/m?stopID=123456>

# Bicycles and Public Transit

*we need to learn to live with them!*

- **Approaches:**

1. Automobile “supremacy”
2. Accommodation – “vehicularists”
3. Facilitation = “Copenhageners”

# Bikes in Transit

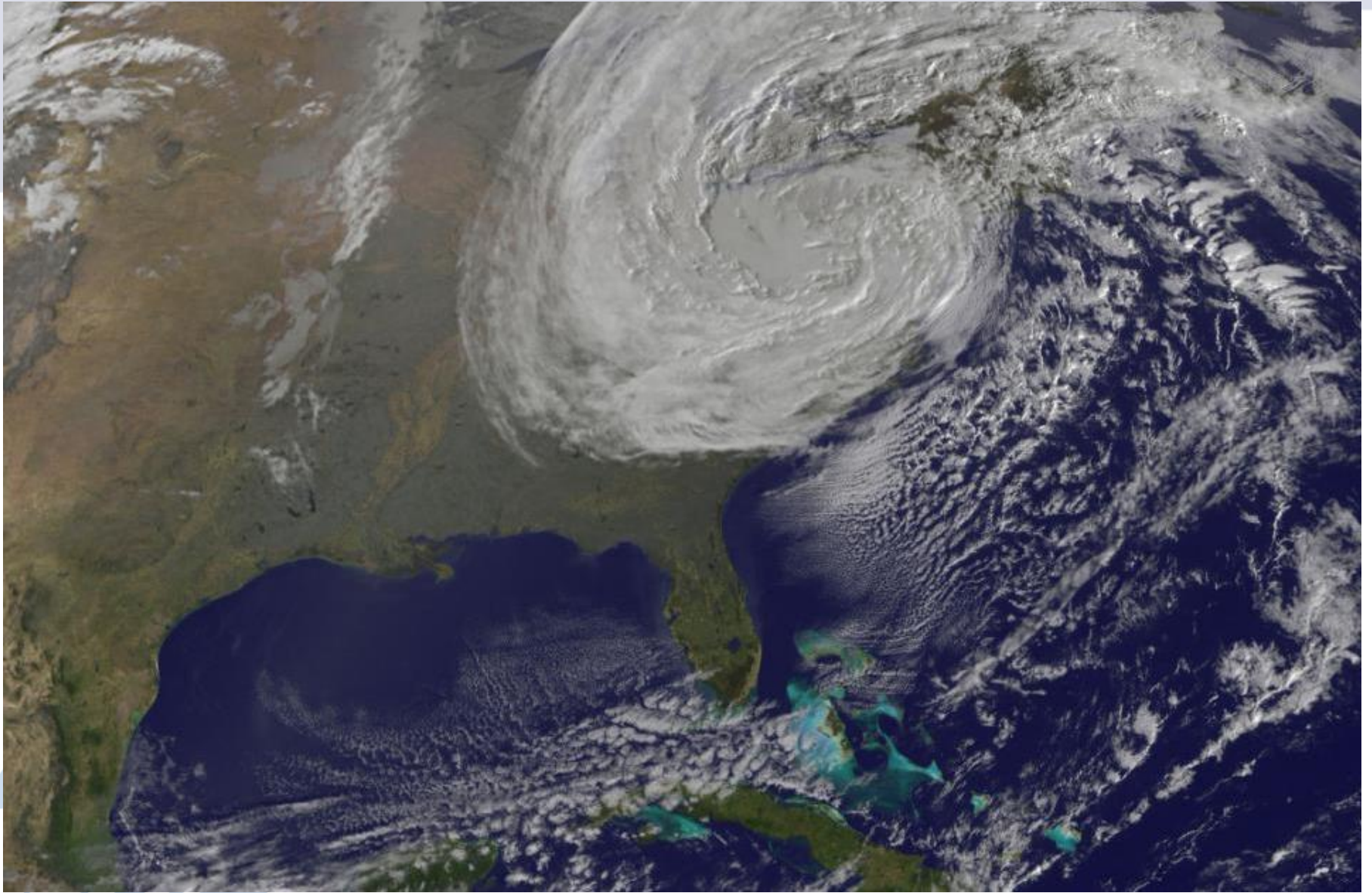


- Bikes can serve as “last mile” connections especially in suburban areas
- Challenge for transit to accommodate

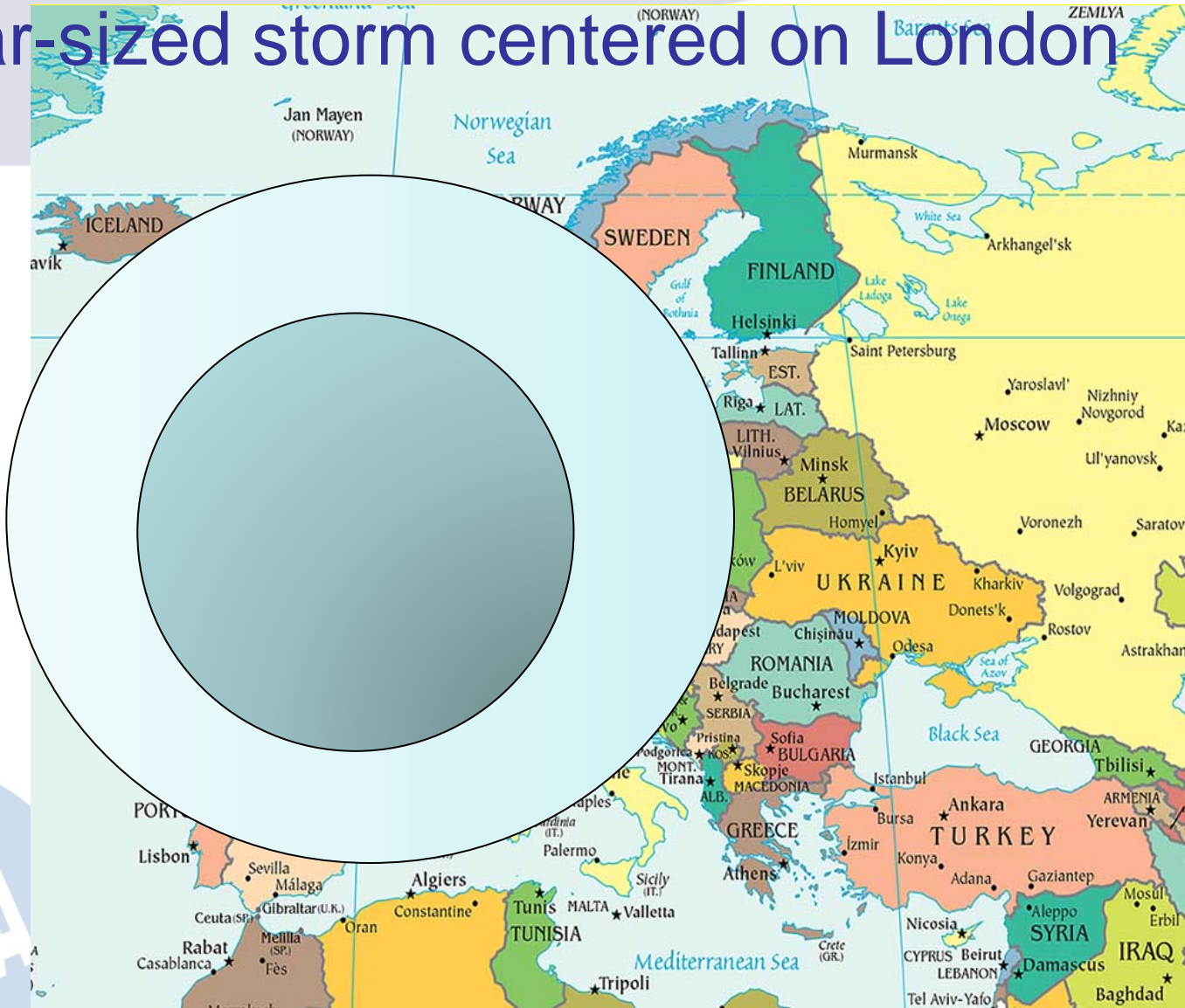


# Superstorm Sandy, October 2012

- Worst natural disaster
- Sign of climate change
- Recent new example in the Philippines



# Similar-sized storm centered on London



# Throughout storm, NYCT deployed an established Three Tiered Emergency Management Structure

## Role

- Strategic direction and oversight from senior leadership
- Coordination with MTA HQ and external partners

- Tactical decision making and monitoring

- Operational decision making and monitoring

Situation  
room

Incident Command Center  
(Subways) /  
Satellite Offices (Buses)

Rail Control Center and  
Bus Command Center

# Subways



Stillwell Yard



Lenox Terminal



Bowling Green



# Sandy caused major flood damage across the system



**Numerous other locations with moderate flooding and wind damage including**

- Downed trees
- Roof / canopy / sidings damages
- Communication systems damages
- Signal system damages

**8 stations with major flood damage –** South Ferry, Whitehall, 148<sup>th</sup> St, 207<sup>th</sup> St, Dyckman, Beach 116<sup>th</sup> Station, 86<sup>th</sup> St Sea Beach, Stillwell

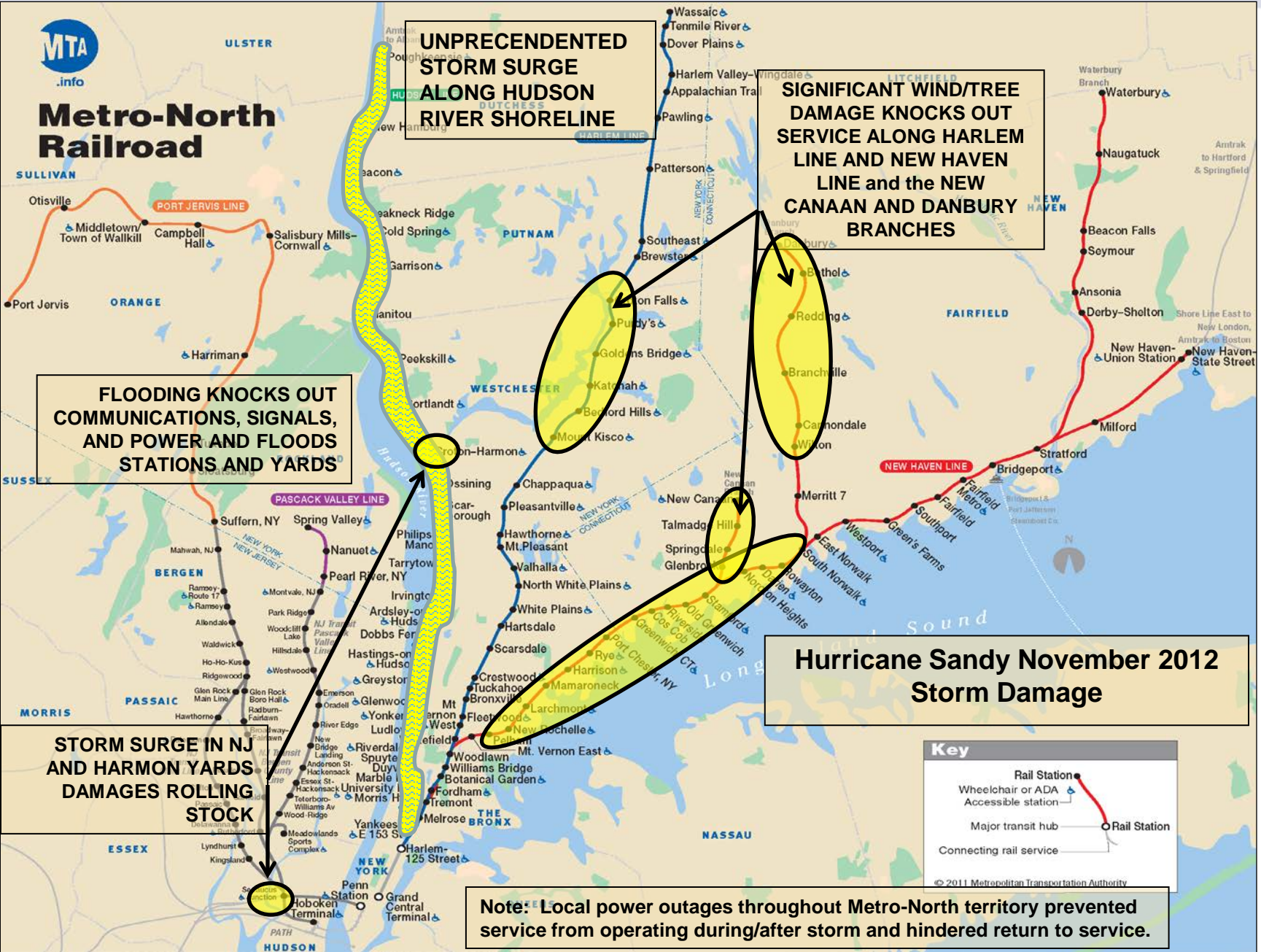
**Train yards and bus depot with significant flood damage**

**Rockaways track washout**

**Staten Island Railway maintenance shop major flood damage**

**NOT EXHAUSTIVE**

# Metro-North Railroad Sandy damage map



## Flooded under-river tubes - Cranberry



## South Ferry



## Flooded stations – South Ferry



## Rockaways washout



New York City Transit

## Rockaways washout



## Flooded Staten Island Railway shop



New York City Transit

# Most subway service was recovered within a week of the storm

2 days after storm: 57%



One week later: 94%



# Hurricane Sandy Recovery Map

- Constantly updated the map as service was restored
- Each time the map was updated, we immediately posted it to Twitter & Facebook
- Feedback from customers was overwhelmingly positive each time updated service restorations became visible on the map



## Specific concepts for MTA level asset hardening are being investigated

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- Stair closures
- Vent closures
- Bladders and floodgates
- Upsizing of pumps
- Power redundancy for pumps
- Communications and relay room hardening
- Hardening of signal equipment
- Additional deep wells
- Hardening of power supply systems
- Flood mitigation measures at low-lying depots
- Additional generators
- Additional pump trains





# The Road Ahead

- Major latent defects work (recovery)
- Resiliency
- Delivery of daily service



# Paradigm Shifts for Modern Transit Systems

## 20<sup>th</sup> Century

Independent, Insular

To/From Work Trips

Project Oriented

Static Information

Transit Only



## 21<sup>st</sup> Century

*Engaged, Transparent*

*24/7*

*Results Oriented*

*Dynamic Real Time Data*

*Public/Private Partnerships*

## Closing thoughts...

- New technology does not “automatically” improve service delivery
- But better information improves the PERCEPTION of service quality and delivery
- Agency transparency and accountability is key
- Customer expectations continuously rise even with improvements – stay ahead of the

## And finally.... questions and some “food for thought”

- Public transit cannot solve all urban problems but has a huge impact on the quality of life
- To what extent can or should transit provide “door-to-door” mobility?
- How to balance demands for personal comfort and limits of technical and financial feasibility?
- How to change media attitude and public/political perception toward public transit? *Needs to be earned!*

an ancient proverb...

*“Great societies grow when  
elders plant trees knowing  
that they will not enjoy their  
shades”*

**GRACIAS**  
**Thank you**

Questions?

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