

# Line Segment Closure Program

Presentation to New York City Transit Committee

November 14, 2011

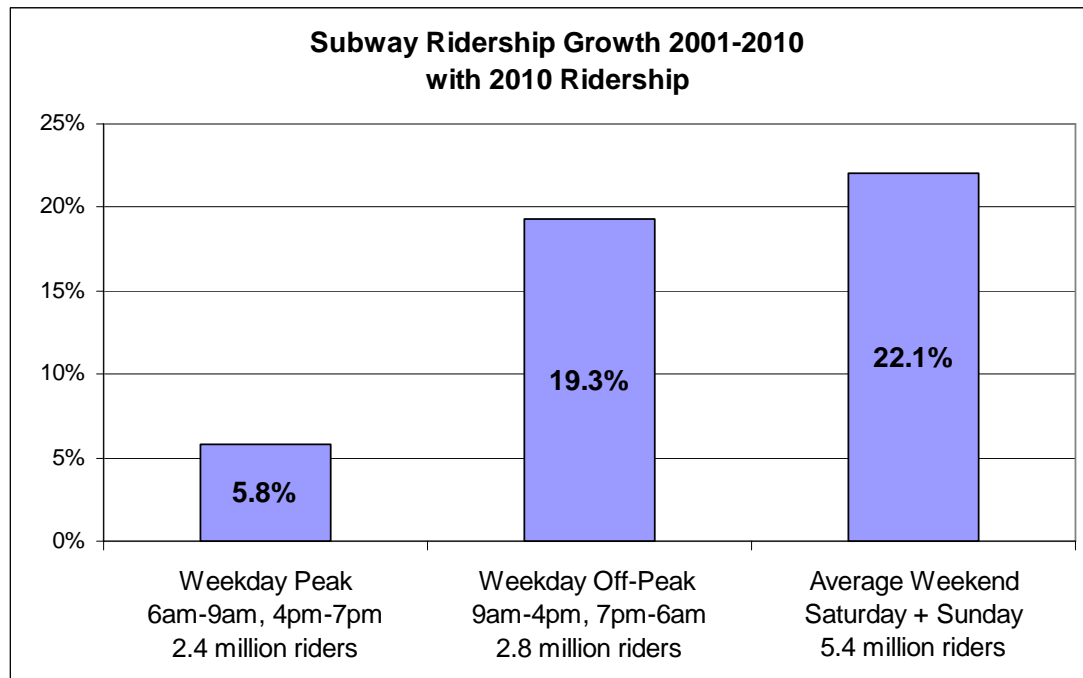


## WORKING IN A 24/7 SYSTEM

- In a 24/7 system, 'No Time Is A Good Time To Do Work'.
  - NYCT is one of the few rail transit systems that operate 24/7, others include: PATH, PATCO, and CTA (red and blue lines).
- Inspecting and maintaining assets (Power, Track, Signals, Infrastructure and Communications) is critical to public safety and system reliability. Performing this time-intensive and mentally focused work when trains are in service and with a live third rail is especially challenging.
- Major Capital Track work is done under planned track shutdowns, primarily on weeknights and weekends.
- Enhanced safety requirements and protocols established following the deaths of NYCT workers in 2003 and 2007 have significantly limited the on-track work window.

## NO TIME IS A GOOD TIME: LIMITED OPPORTUNITIES FOR GOOD REPAIR WORK IN A 24/7 SYSTEM

- Historically, major capital work was concentrated on weekends and late nights to minimize customer impact.
- Even those times are difficult now.
  - From 2001 to 2010 ridership increased 12.6% on weekdays, and 22.1% on weekends, so more riders are affected when work is done.
  - 82% of the 200 million new riders were during off-peak hours on weekdays and on weekends.



# FEWER WORK WINDOWS AND YET MAINTAINING ASSETS IS ESSENTIAL TO KEEP THE SUBWAY MOVING

## Maintaining assets is necessary to:

- Ensure the safety of passengers and staff.
- Improve service and reliability through prevention of disruptions, delays and incidents due to breakdowns.
- Extend the useful life of our infrastructure, components and/or equipment.
- Achieve a clean, inviting, functional and safe station environment.

**Safety & Operations:** Our current maintenance work model has employees performing inspection and maintenance work under traffic.

**Service Delays:** A review of Weekday Terminal Delay reports shows that together, Right of Way (ROW) maintenance staff and Track workers account for nearly half of subway train delays, as evidenced by this summary from September 2011:

| Categories            | Delays | %      |
|-----------------------|--------|--------|
| Right of Way Delays   | 7,122  | 30.1%  |
| Track Gangs           | 3,872  | 16.4%  |
| Subtotal Work Related | 10,994 | 46.4%  |
| Total All Delays      | 23,675 | 100.0% |

## **SOLUTION: INCREASED USE OF LIMITED-DURATION CLOSURES**

**Limited-duration line segment closures for both maintenance and capital work will have substantial benefits:**

- Achieves focused maintenance and improved safety for employees due to the suspension of revenue service.
- Promotes efficiencies from long productive work windows without having to “clear up” at repeated and frequent intervals for trains.
- Minimizes the length of customer disruption, by increasing productive work time.
- Maximizes the potential for multiple departments to work in a closure area.
- Facilitates better maintenance and capital investment, which will reduce breakdowns and train delays.

## STRATEGIES FOR MAKING IMPROVEMENTS IN A 24/7 SYSTEM

**Use limited-duration line segment closure where possible for both maintenance & capital track projects**

**Concept:** Concentrate work in uninterrupted time periods to provide unimpeded worker access to assets.

**Target Areas:** Line segments with significant alternate routes and services.

**Two Initiatives Proposed:**

**Maintenance Line Segment Closure Program**

**Capital Track Line/Track Segment Closure Program**

## STRATEGIES FOR MAKING IMPROVEMENTS IN A 24/7 SYSTEM (cont'd)

### **Benefit:**

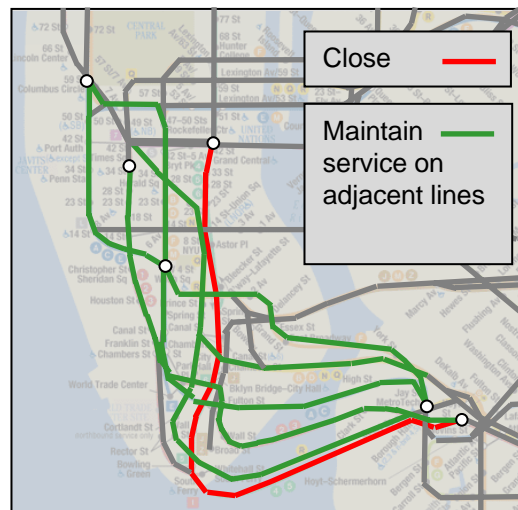
- Improve productivity
- Maximize potential for simultaneous maintenance and capital work on multiple assets in one area
- Shorten overall project duration, thereby reducing customer inconvenience and providing a safer environment for employees to perform highly focused and intensive inspections and maintenance activities
- Examples of efficiencies during line segment closures:
  - More thorough inspections and maintenance performed by the Signals Division using a centralized workforce model.
  - More intensive track, trough and drain cleaning essential to minimize fires and signal delays

# PROPOSED 2012 MAINTENANCE LINE SEGMENT CLOSURE PROGRAM

**Current practice:** Inspection and maintenance are conducted during live revenue service with employees repeatedly “clearing up” for trains as they go by and then resuming their work activities. This reduces time for work tasks, and causes service delays.

**Maintenance Line Closure Proposal:** For identified lines in the Central Business District (CBD) with significant alternate services, full (all tracks) CBD segment line closure over 4 consecutive weeknights from 10PM to 5AM. Closure is once per quarter per line (4 closures per quarter in the CBD). Full regular service maintained on adjacent CBD lines.

**Applies to four line segments in the CBD: Lexington Ave, 6<sup>th</sup> Ave, 7<sup>th</sup> Ave, & 8<sup>th</sup> Ave**



First Pilot - Lexington Ave  
line segment closure  
planned for week of 1/9/12



## PROPOSED 2012 MAINTENANCE LINE SEGMENT CLOSURE PROGRAM (cont'd)

**Customer Impact:** customers of closed line segment have up to 10-15 minute added travel time due to travel via adjacent lines.

Estimated Customer impact per nightly closure:

Lexington 4 5 6 – 38,500

7th Ave 1 2 3 – 23,000

6th Avenue B D F M – 35,000

8th Avenue A C E – 39,000

(As a point of comparison, the system-wide weeknight ridership is 249,000)

**Annual Productivity Benefit: \$10M - \$15M**

**Safety Benefit:** Provides a safer work environment by allowing staff to perform essential tasks without the risks inherent in working under train traffic.

**Service Benefit:** Fewer train delays due to work gangs along tracks in regular revenue service.

## PROPOSED 2012 MAINTENANCE LINE SEGMENT CLOSURE PROGRAM (cont'd)

### First Quarter 2012 Maintenance Closure Plans:

- Lexington Ave **4 5 6** (pilot): Grand Central to Atlantic Ave – Jan 9 -13, 2012
- 7<sup>th</sup> Ave **1 2 3**: 34<sup>th</sup> St to Atlantic - Feb 13 -17, 2012
- 6<sup>th</sup> Ave **B D F M**: 59<sup>th</sup> St to W 4<sup>th</sup> St - Feb 20 - 24, 2012
- 8<sup>th</sup> Ave **A C E**: 59<sup>th</sup> St to Jay St - Mar 12 -16, 2012

Additional nighttime line closures for the same areas will be scheduled in subsequent quarters.

## PROPOSED 2012 CAPITAL TRACK LINE/TRACK SEGMENT CLOSURE PROGRAM

**Current practice:** Track reconstruction typically involves work on weeknights and weekends, with service resumed at slow speeds during the day. This results in multiple weeks of slow speeds and weeknight and weekend closures.

**Capital Track Closure Plan:** Track segment closure with work continuing up to 24 hours per day with no service for up to 16 days. Passengers either back-ride or use other lines during this time. Service is restored weeks sooner than in conventional method.

**Benefit:** Increase productivity and decrease overall project duration by extending track closure time during core work period, (there is prep work before and punch list work after the core work period).

## PROPOSED 2012 CAPITAL TRACK LINE/TRACK SEGMENT CLOSURE PROGRAM (cont'd)

**Pilot Planned for south of Van Wyck Blvd – Queens Blvd Line (Manhattan-bound local track from Parsons Blvd to Forest Hills/71<sup>st</sup> Ave)**

### **CONVENTIONAL**

**Description:** 8 weekend shutdowns and 20 weeknight shutdowns (Total of 36 days)

**vs.**

### **MODIFIED**

**Description:** 9 continuous days of shutdown (Total of 9 days)

**Cost: \$6.3M**

**Cost: \$5.0M**

**Customer Impact:** 190,000 customers experiencing 225,000 passenger hours of delay due to back-riding (10 min delay per trip) and slow speed (1.5 min delay per trip)

**Customer Impact:** 90,000 customers experiencing 150,000 passenger hours of delay due to back-riding (10 min delay per trip)

**Pilot Savings: \$1.3M (21%)**

## PROPOSED 2012 CAPITAL TRACK LINE/TRACK SEGMENT CLOSURE PROGRAM (cont'd)

### Projects with limited duration track closure planned for 2012:

- S/O Van Wyck: 9-day shutdown **F** Manhattan bound local track (Parsons to Forest Hills/71<sup>st</sup> Ave)
- S/O 161<sup>st</sup> St: 9-day shutdown **D** Express Track in Bronx - all local service; no express (Norwood 205<sup>th</sup> St to 145<sup>th</sup> St)
- N/O 179<sup>th</sup> St: 9-day shutdown - no effect on service
- Bay 50<sup>th</sup> St: 16-day shutdown **D** All tracks (Bay Pkwy to Stillwell)
- 241<sup>st</sup> St: 16-day shutdown **2** All tracks (241<sup>st</sup> St to Nereid Ave)

# CUSTOMER COMMUNICATION

## **Customer Notification plans:**

Provide advance notification to customers, including any alternative transportation options at least 4 weeks in advance of the operation through:

- Station signs
- On-train notices
- MTA Website
- Social media
- E-mail alerts
- Newspaper ads

Outreach to elected officials, community boards, affected business and institutions

MTA Press Office outreach to print and broadcast media

**Measuring Success:** The line segment closure program will be evaluated to determine whether productivity and safety goals have been achieved as well as the overall impact on customers.

# SUMMARY

- In a 24/7 system, 'No Time Is A Good Time To Do Work'.
- Inspection and maintenance tasks are typically done under train traffic reducing efficiencies and causing delays.
- Capital Track work is completed primarily on weeknights and weekends and results in slow speeds mid-week.
- Efficiencies can be achieved using limited-duration line segment closure where possible for both maintenance & capital track projects

Two Initiatives Proposed:

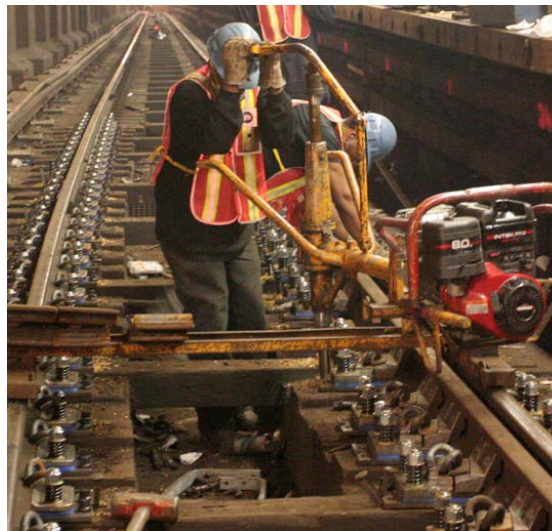
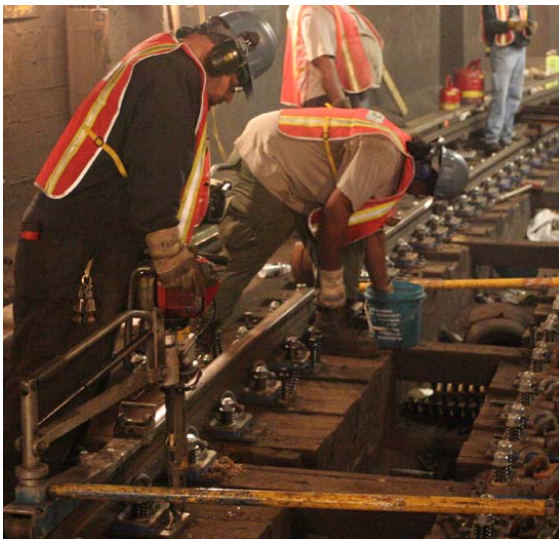
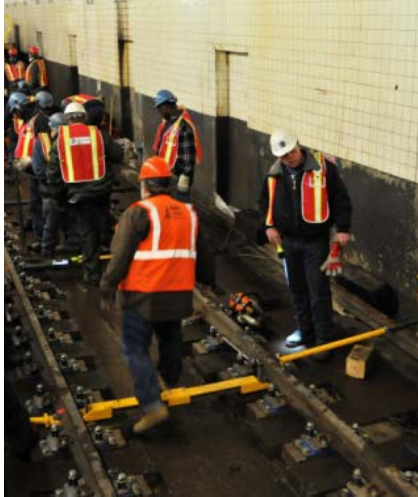
Maintenance Line Segment Closure Program

Capital Track Line/Track Segment Closure Program

- Benefits include productivity and safety improvement, lower costs, & fewer delays to customers



# SAMPLE PHOTOS TRACK NEW INITIATIVES





## SAMPLE PHOTOS SIGNAL WORK

