



Metropolitan Transportation Authority

Capital Program Oversight Committee Meeting

February 2014

Committee Members

T. Prendergast, Chair

F. Ferrer

A. Albert

R. Bickford

N. Brown

A. Cappelli

M. Lebow

S. Metzger

J. Molloy

M. Page

M. Pally

A. Saul

J. Sedore

C. Wortendyke



MEETING AGENDA

MTA CPOC COMMITTEE

February 24, 2014 – 1:45 pm

347 Madison Avenue
Fifth Floor Board Room
New York, NY

AGENDA ITEMS

Page

PUBLIC COMMENTS PERIOD

1. APPROVAL OF MINUTES JANUARY 27, 2014

TAB 1
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2. COMMITTEE WORK PLAN

1 – 4

3. CAPITAL CONSTRUCTION COMPANY

- MTACC Construction Safety

TAB 2

4. NEW YORK CITY TRANSIT, LONG ISLAND RAIL ROAD, METRO-NORTH RAILROAD

- Semi-Annual Update on MTA-wide Track Programs

TAB 3

5. MTA HEADQUARTERS

- Semi-Annual Update on MTA-wide Sandy-related Projects

TAB 4

6. CAPITAL PROGRAM STATUS

- Commitments, Completions and Funding Report
- Quarterly Capital Change Order Report (*for information only*)

TAB 5
5 – 1
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Date of next meeting: Monday, March 24, 2014 at 1:45 PM

MINUTES OF MEETING
MTA CAPITAL PROGRAM OVERSIGHT COMMITTEE
January 27, 2014
New York, New York
1:45 P.M.

MTA CPOC members present:

Hon. Thomas Prendergast, Chairman
Hon. Fernando Ferrer
Hon. Andrew Albert
Hon. Robert Bickford
Hon. Alan Cappelli
Hon. Susan Metzger
Hon. John Molloy
Hon. Mark Page
Hon. Mitchell Pally

MTA CPOC members not present:

Hon. Norman Brown
Hon. Mark Lebow
Hon. Andrew Saul
Hon. James Sedore
Hon. Carl Wortendyke

MTA staff present:

Naeem Din
Michael Garner
Craig Stewart
Michael Wetherell

LIRR staff present:

Chris Calvagna
Rich Oakley
Elisa Picca
Helena Williams

MNR staff present:

Howard Permut
Wayne Staley

MTACC staff present:

Michael Horodniceanu

McKissack + Delcan staff present:

Joe DeVito
Mohammad Mohammadinia
Darlene Rivera

Supplemental Independent Review staff present:

Rick Thorpe

* * *

Chairman Prendergast called the January 27, 2014 meeting of the Capital Program Oversight

Committee to order at 2:50 P.M.

Public Comments Period

There were no public speakers in the public comments portion of the meeting.

Meeting Minutes

Upon motion duly made and seconded, the CPOC members approved the minutes to the previous meeting held on December 16, 2013.

Committee Work Plan

Mr. Stewart noted that the CPOC Work Plan has been modified to include a presentation today by LIRR and Metro-North on Positive Train Control. Mr. Stewart then took the opportunity to introduce Mike Wetherell, the new Director of MTA Office of Construction Oversight, to the Committee.

LIRR and MNR Report on Positive Train Control

Ms. Williams, Mr. Calvagna, Mr. Staley and Mr. Permut provided a general overview of Positive Train Control (PTC), details of LIRR's and MNR's current signal system configurations, and the process by which PTC would be implemented at the two railroads. Further details of the presentations by LIRR and MNR personnel, and Committee Members' comments and questions with respect thereto are included in the video recording of the meeting maintained in MTA's records.

MTACC Report on East Side Access

Mr. Horodniceanu gave a project overview, including a discussion of the progress of the Manhattan caverns and tunnels, as well as construction highlights in Queens. Chairman Prendergast then provided background information, including scope of work, regarding the MTA's Supplemental Independent Review (SIR) consultant, Rick Thorpe, followed by an introduction of Mr. Thorpe to the Committee. Mr. Thorpe then outlined his team's initial findings and recommendations regarding contract repackaging, organizational structure and an examination of budget and schedule estimates. Mr. Stewart then explained two bar charts citing preliminary project budget and schedule forecasts by MTACC and several other entities, including the key assumption underlying these preliminary forecasts, i.e., that the project will achieve a medium degree of risk mitigation. Chairman Prendergast summed up the presentation by citing the progress to date regarding management and organizational changes, as well as next steps. In its Project Review, the IEC called for timely completion of the organizational adjustments cited by the SIR. In addition, the IEC affirmed the validity of the cost and schedule review approach, as outlined in the preceding presentations. Further details of the presentations, and Committee Members' comments and questions with respect thereto are included in the video recording of the meeting maintained in MTA's records.

LIRR Report on East Side Access Readiness

Mr. Oakley and Ms. Picca reported on progress of those projects that comprise the \$445M East Side Access Readiness Projects: Jamaica Capacity Improvements, Phase I (construction completion scheduled for February 2018); Massapequa Pocket Track (construction completion scheduled for January December 2015); Great Neck Pocket Track and Colonial Road Bridge (construction completion scheduled for May 2016); Port Washington Yard Track Extensions (construction completion scheduled for 2018); and Mid-Suffolk Yard (construction completion

scheduled for January 2018). In its Project Review, the IEC confirmed that the ESA Readiness projects are on schedule for substantial completion in time for the ESA project itself; additionally, the IEC finds that the East Side Access Readiness projects are on budget. Further details of the presentations, and Committee Members' comments and questions with respect thereto are included in the video recording of the meeting maintained in MTA's records.

MTACC Report on 7-Line Extension

Mr. Horodniceanu reported that the project is expected to achieve revenue service by late summer/early fall 2014 and is currently forecast to be completed under budget. In its Project Review, the IEC confirmed that the overall project budget remains \$2.4 billion, but cited a forecast revenue service date of fourth quarter 2014. Further details of the presentations by Mr. Horodniceanu and the IEC, and Committee Members' comments and questions with respect thereto are included in the video recording of the meeting maintained in MTA's records.

Quarterly Update on Minority, Women and Disadvantaged Business Participation

Following an introduction by Mr. Garner, Mr. Din provided an update on the MWDBE Participation Rates. In the July – December 2013 timeframe, the MTA achieved a 16% participation rate against its 17% Federal Goal at mid-year. The MTA met and exceeded its 10% MBE and WBE goals at 10% and 11%, respectively.

MTA Capital Program Commitments and Completions

Mr. Stewart brought the Board's attention to the MTA Capital Program Commitments and Completions Report and invited Committee Members' questions, of which there was none.

Adjournment

Upon motion duly made and seconded, Chairman Prendergast adjourned the January 27, 2014 meeting of the MTA Capital Program Oversight Committee at 4:45 PM.

Respectfully submitted,
Michael Jew-Geralds
Office of Construction Oversight



2014 CPOC Committee Work Plan

I. Recurring Agenda Items

Approval of the Minutes
Committee Work Plan
Commitments/Completions and Funding Report
Follow-up Items as needed

II. Specific Agenda Items

March 2014

Quarterly MTA Capital Construction Company Update
Semi-Annual Update on Capital Program Security Projects
Quarterly Traffic Light Report

April 2014

Semi-Annual Update on B & T Capital Program
Semi-Annual Update on NYCT, LIRR & MNR New Fare Payment Initiatives

May 2014

Semi-Annual Update on MNR/LIRR Infrastructure
Semi-Annual Update on NYCT Systems, Signals, Train Control and Tech Initiatives
Annual Update on NYCT Bus Time
Annual Update on MNR Customer Communications
Annual Update on LIRR Police Radio
Quarterly Capital Change Order Report

June 2014

Quarterly MTA Capital Construction Company Update
Semi-Annual Update by LIRR on ESA Readiness
Semi-Annual Update on NYCT Stations Division
Quarterly Traffic Light Report

July 2014

Annual Update on MNR/LIRR Rolling Stock
Annual Update on NYCT Rolling Stock
Annual Update on NYCT Bus Procurements
Semi-Annual Update on Minority, Women and Disadvantaged Business Participation

September 2014

Quarterly MTA Capital Construction Company Update
Semi-Annual Update on MTA-wide Sandy-related Projects
Semi-Annual Update on Capital Program Security Projects
Quarterly Traffic Light Report
Quarterly Capital Change Order Report

October 2014

Annual Update on NYCT Infrastructure
Semi-Annual Update on NYCT, LIRR & MNR New Fare Payment Initiatives
Semi-Annual Update on MTA-wide Track Programs

November 2014

Semi-Annual Update on B & T Capital Program
Semi-Annual Update on NYCT Systems, Signals, Train Control and New Tech Initiatives
Semi-Annual Update on MNR/LIRR Infrastructure
Annual Review of CPOC Charter
Quarterly Capital Change Order Report

December 2014

Quarterly MTA Capital Construction Company Update
Semi-Annual Update by LIRR on ESA Readiness
Semi-Annual Update on NYCT Stations Division
Quarterly Traffic Light Report

MTACC Construction Safety

2-1



Safety Management System (SMS)

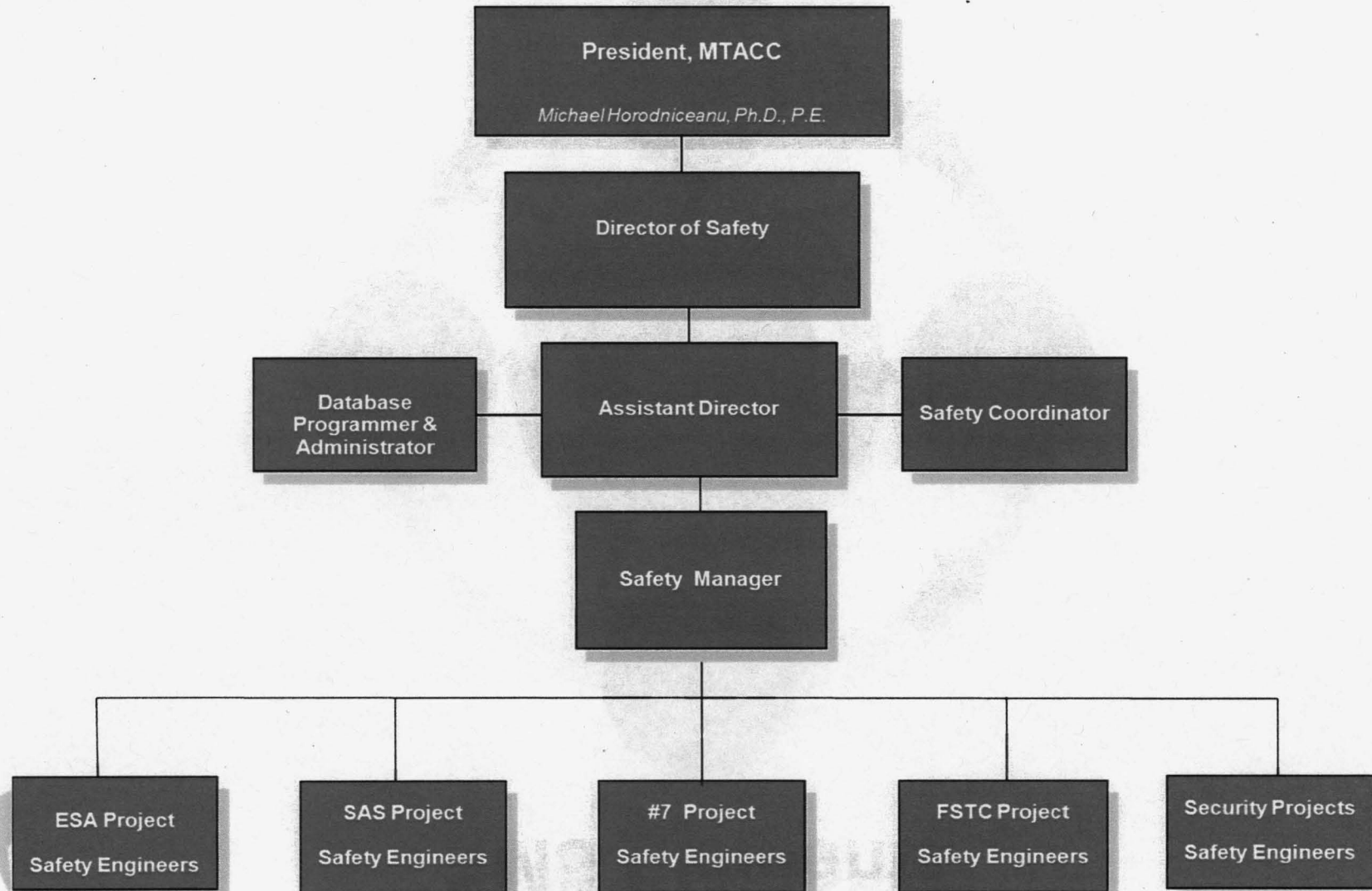
- A system to address:

- Public Safety
- Environmental Safety
- Worker Safety

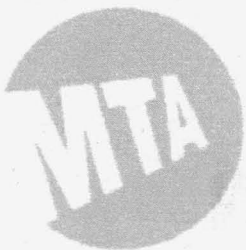
- MTACC provides oversight of safety on all four capital projects: Fulton Center, Second Avenue Subway, East Side Access, and the #7 Line Extension.



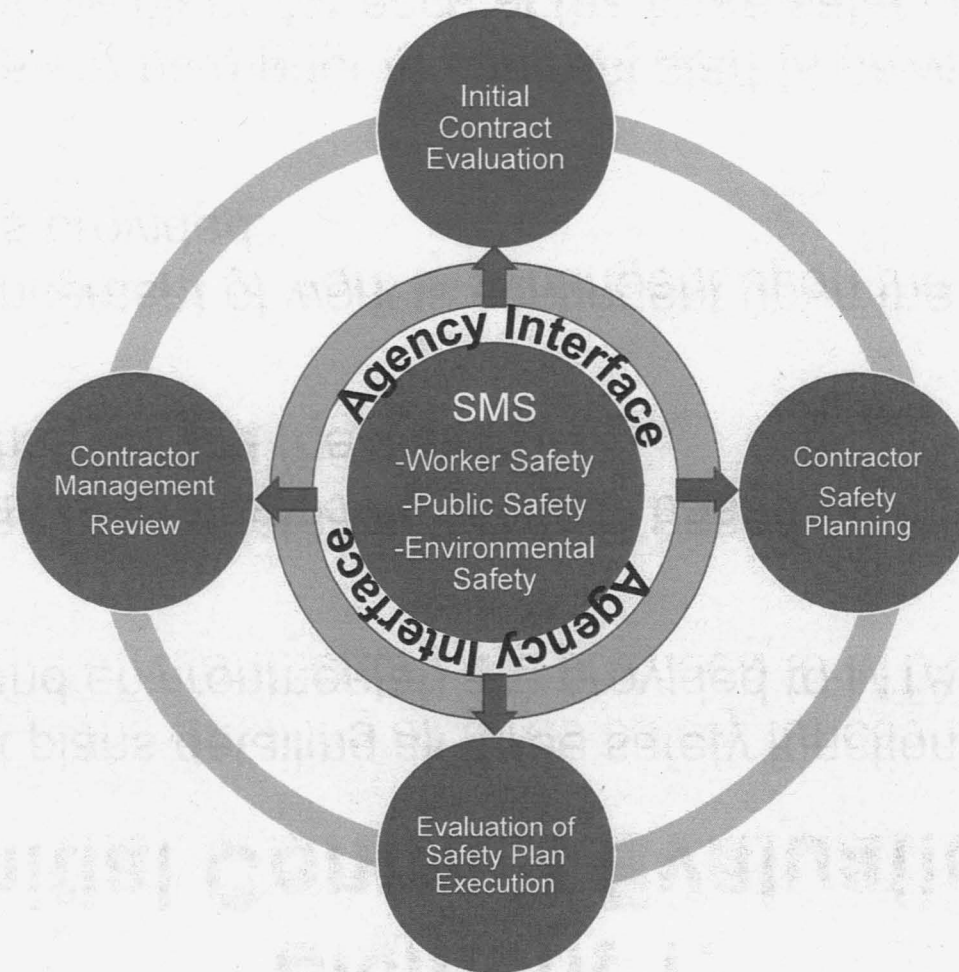
MTACC Safety Organizational Chart



SMS Elements



SMS Element 1



Element 1:

Initial Contract Evaluation

- Contract plans detailing all three safety functions (worker, public, and environmental) are provided to MTACC for review.
- Each plan is evaluated by MTACC based on multiple compliance criteria (next slide).
- Commencement of work is contingent upon the acceptance of the plans provided.
- Meetings are held prior to contract start to provide additional review of the plans for each of the three safety functions.



Compliance Criteria

- Compliance with safety standards as dictated by the:
 - Occupational Safety and Health Administration (OSHA)
 - Environmental Protection Agency (EPA)
 - New York City Dept. of Transportation (DOT)
 - New York City Dept. of Environmental Protection (DEP)
 - New York City Dept. of Buildings (DOB)
 - New York City Dept. of Sanitation (DOS)
 - Fire Department of New York (FDNY)
 - New York State Dept. of Environmental Conservation (DEC)

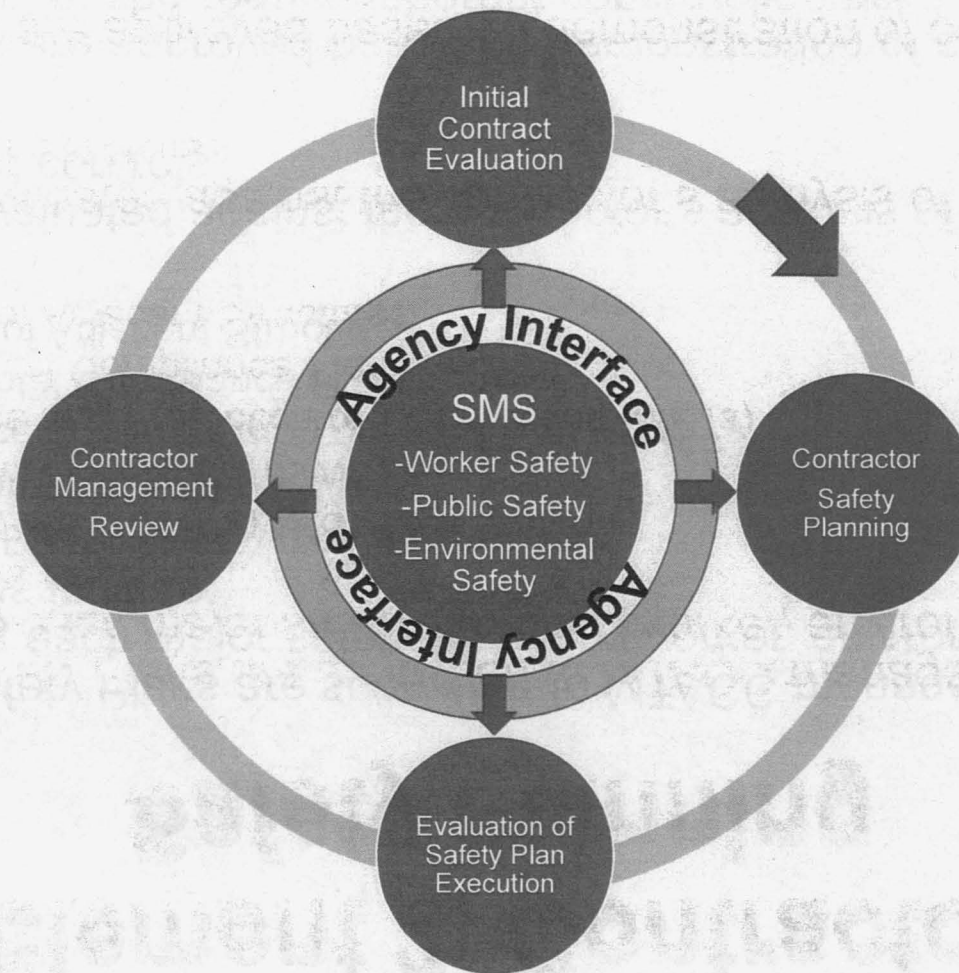


Compliance Criteria (cont.)

- Contractor plan for employee engagement
 - Training
 - Tool box talks
 - Safety committee development
 - Safety stand-downs

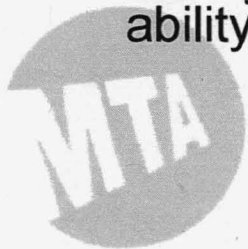


SMS Element 2

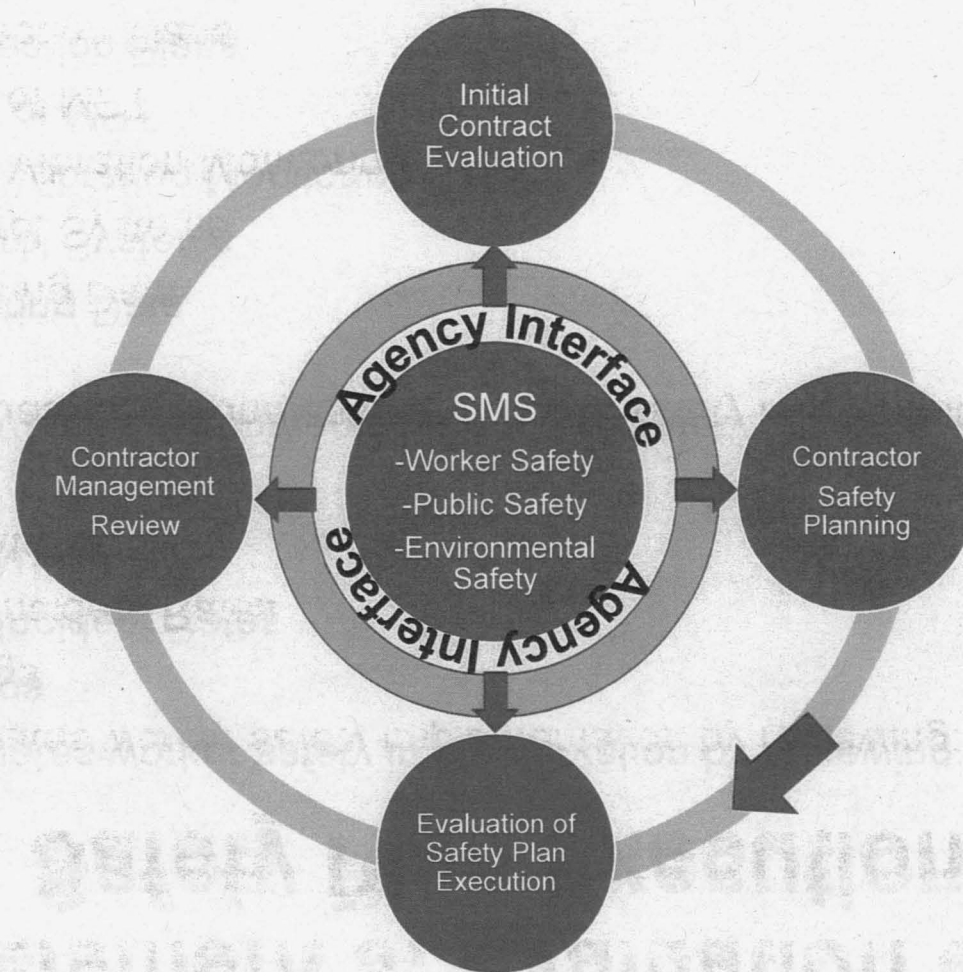


Element 2: Contractor Safety Planning

- Targeted Safety Plans are submitted to MTACC managers representing each major safety function (worker, environmental and public). Plans include:
 - Safe Work Plans (SWPs) (e.g. Blast Plans)
 - Construction Work Plans (CWPs)
 - Maintenance and Protection of Traffic Plans (MPTs)
 - Environmental Compliance Plans (ECPs)
 - Evaluation of Adjacent Structures
- Plans are evaluated against the contractor's analysis of tasks, hazards, and controls.
- Safety plans are approved based on demonstration of contractor's ability to identify and reduce inherent construction risks.



SMS Element 3

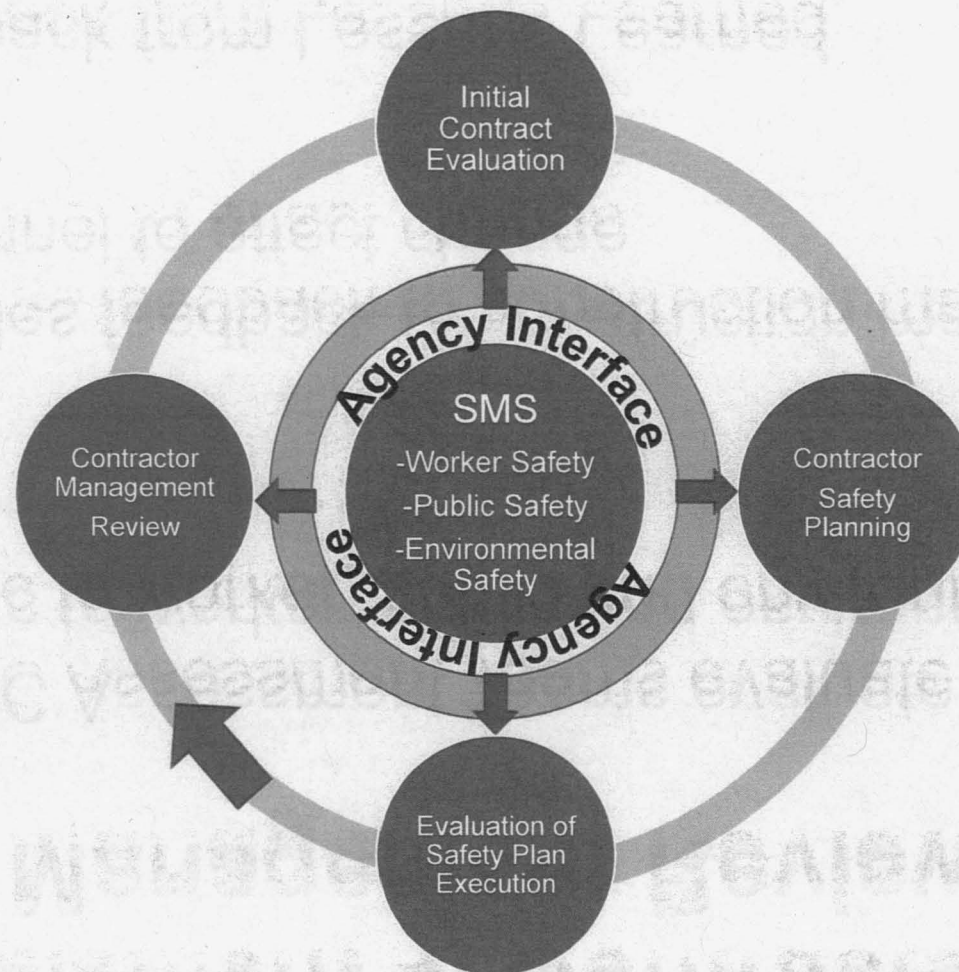


Element 3: Evaluation of Safety Plan Execution

- MTACC evaluates worker safety implementation by reviewing:
 - Hazard Logs
 - Statistical Incident Rates
 - Quarterly Audits
- MTACC evaluates environmental and public safety implementation by reviewing:
 - Air Monitoring Data
 - Dust Control Systems
 - Noise and Vibration Monitoring Data
 - Adequacy of MPT
 - Blast Protection Plans



SMS Element 4



Element 4: Contractor Management Review

- MTACC Assessment Teams evaluate operations specific to worker, public and environmental safety.
- Provides feedback to construction management personnel to affect change.
- Feedback from Lessons Learned



Lessons Learned Example:

Construction Site Protection

- **Incident:** Vehicle careened out of control breaching perimeter of the SAS construction site east side of Second Avenue between 95th and 96th street. Car entered opening of decking system and landed with front half of car suspended on utility infrastructure.
- **After incident:**
 - Identified vulnerabilities between construction perimeter and traffic interface based on site assessments
 - Assigned accountability to all MTACC contractor management staff to maintain boundary protection for every site
 - Required strict adherence to MPT plan and securing of sidewalk entrances
 - Required contractor to close up openings that could pose a safety hazard at the end of every work day
- **Ongoing:**
 - MTACC safety staff evaluates perimeter control during regular site walks/assessments



Lost Time Injury Rates

- Lost time injuries are incidences resulting in days away from work.
- The incident rate is calculated as:

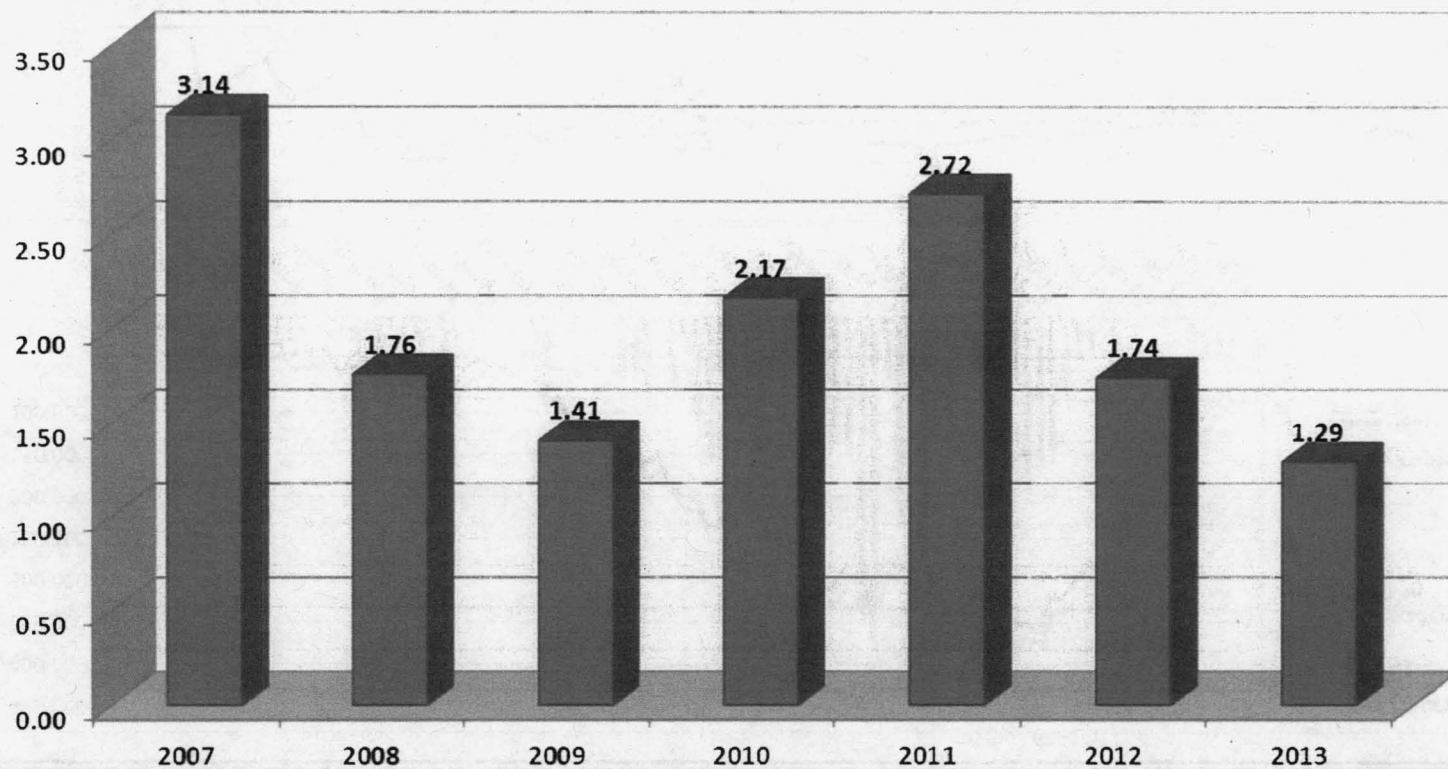
$$\frac{[\# \text{ lost time incidences}] \times 200,000^*}{\text{total hours worked}}$$

- The Federal Bureau of Labor Statistics establishes the national lost time incident rate baseline.
 - The national incident rate before 2010 was 2.6 lost time incidents per 100 workers
 - From 2010 till 2012 the rate was 2.2
 - In 2013 it was 2.0
 - In 2014 it is 1.7

*100 employees working 40 hours for 50 weeks



MTACC Annual Lost Time Accident Rate



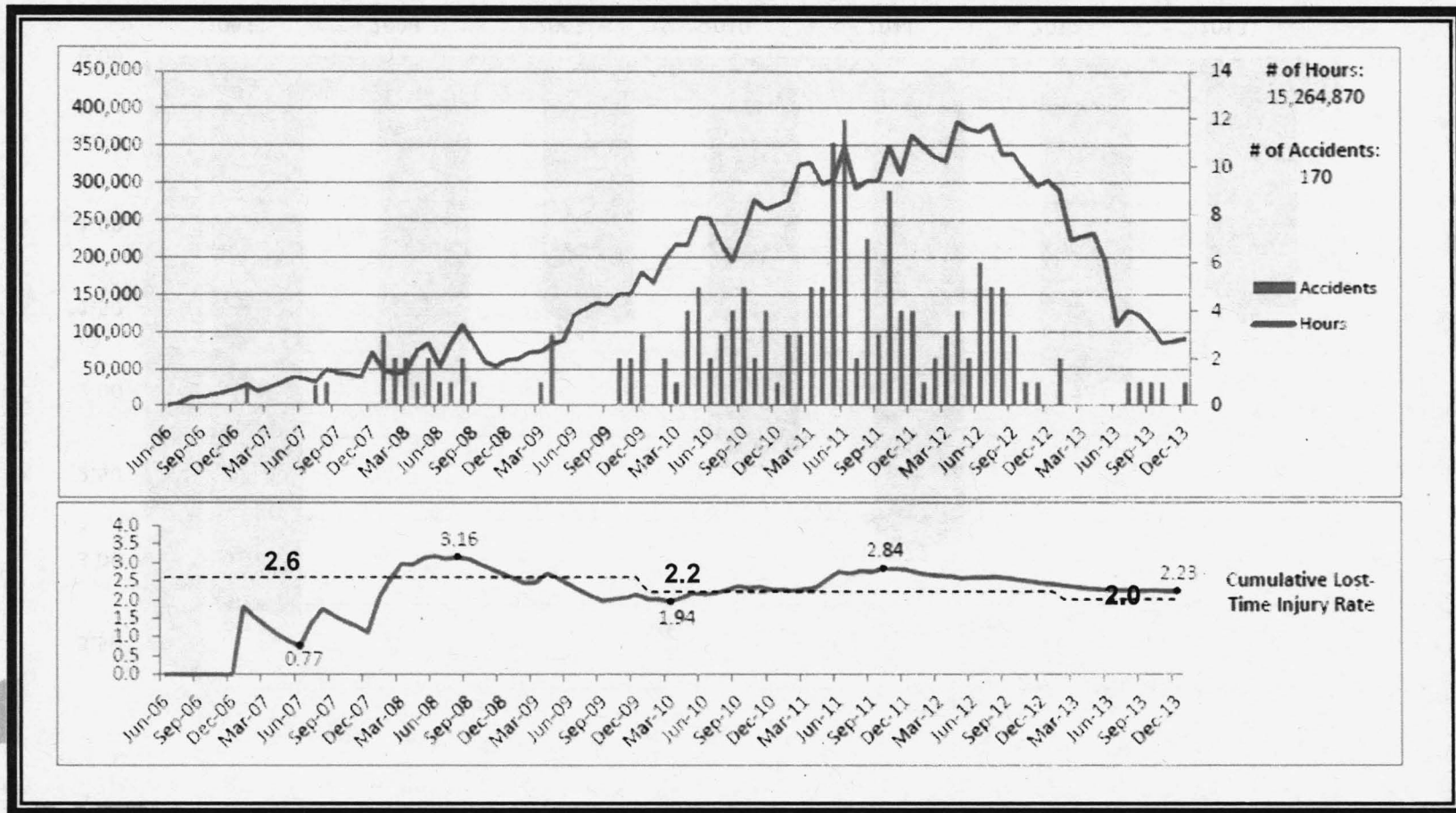
MTACC Lost Time Accident Rate has been reduced by 59% from 2007 to 2013



East Side Access

(June 2006 to December 2013)

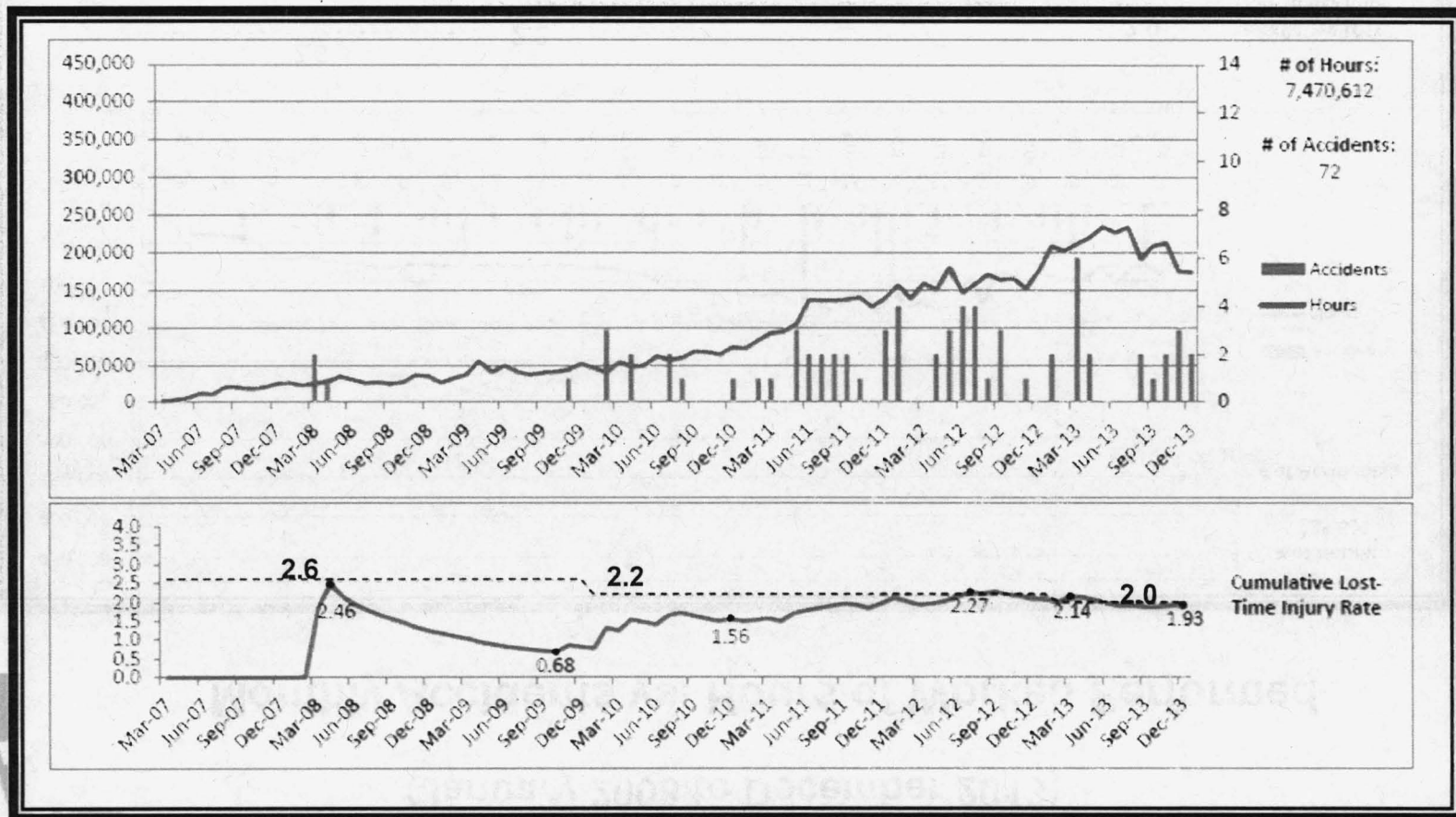
Monthly Accidents vs. Hours of Worked Performed



Second Avenue Subway Phase 1

(March 2007 to December 2013)

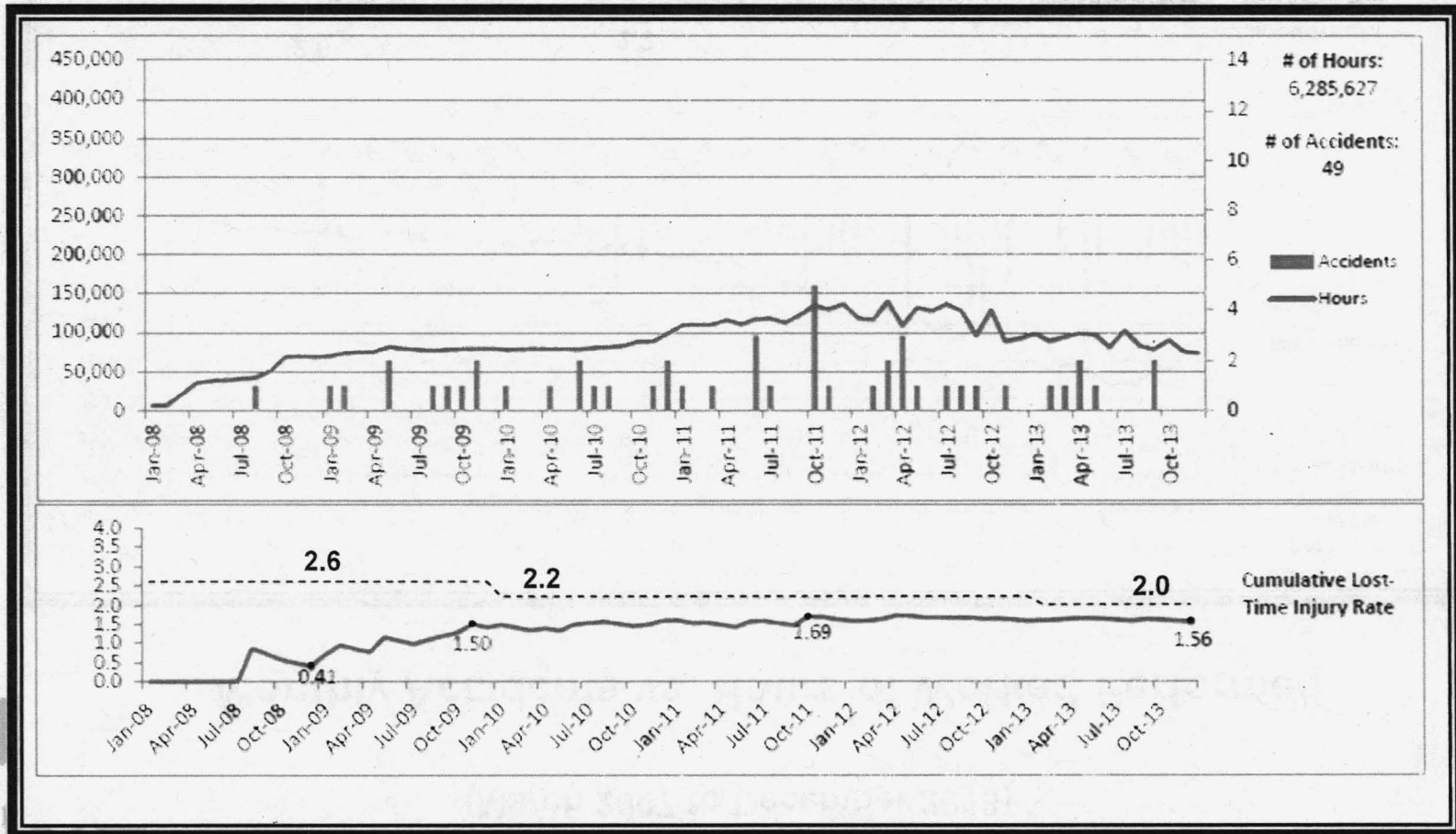
Monthly Accidents vs. Hours of Worked Performed



7 Line Extension

(January 2008 to December 2013)

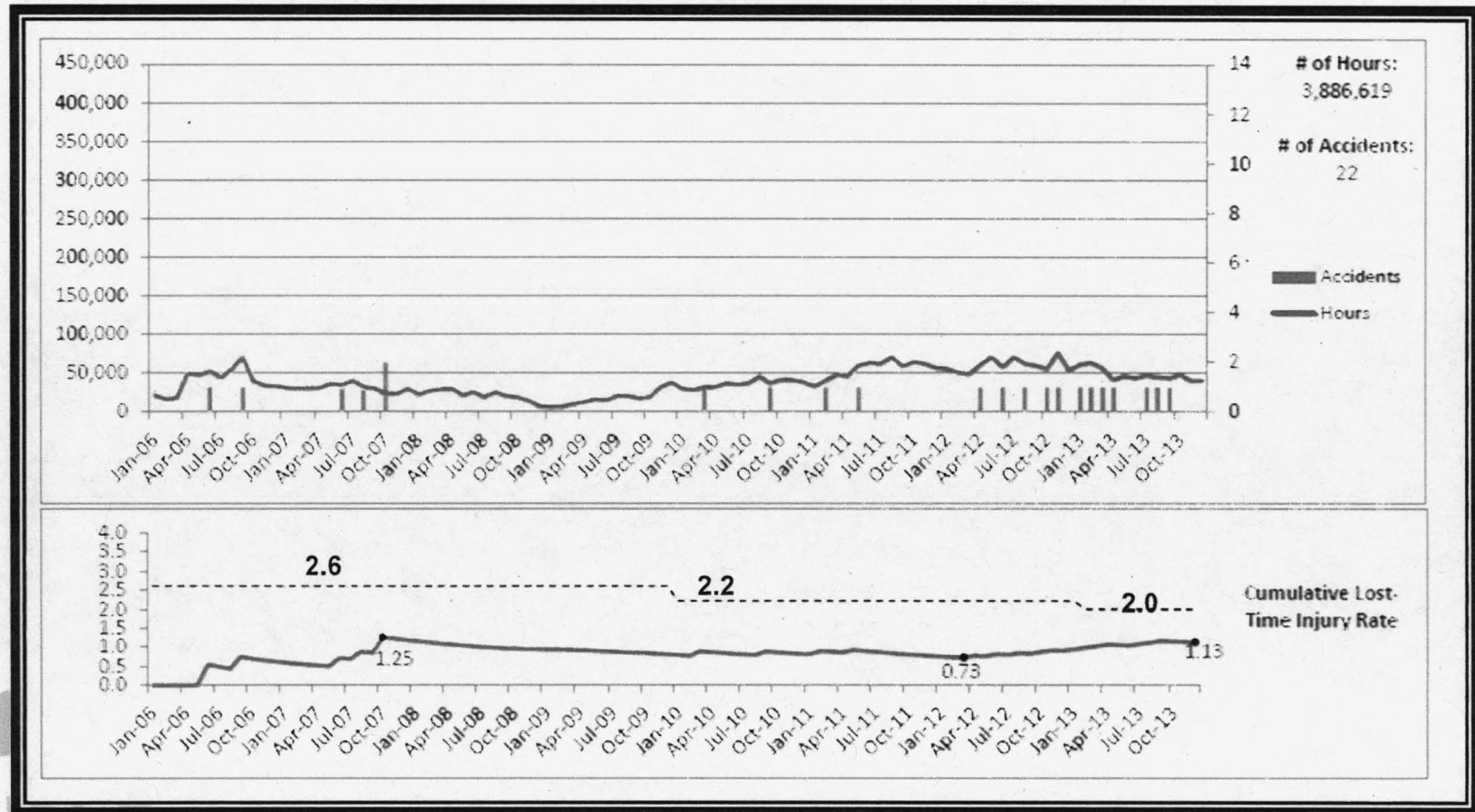
Monthly Accidents vs. Hours of Worked Performed



Fulton Center

(January 2006 to December 2013)

Monthly Accidents vs. Hours of Worked Performed



NYCT Track & Switch Capital Program

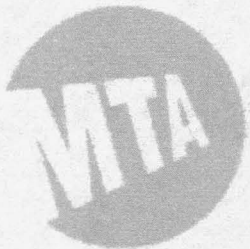
David Knights
Chief Officer, Track
Department of Subways

February 2014



Mainline & Yard Track/Switch Capital Programs

- The planning process
- The benefits of using in-house forces
- Goals achieved to date
- The 2010-2014 Program
- The Proposed 2015-2019 Program
- New Initiatives and New Strategies



Type I Subway Ballasted Track used with a Concrete Invert



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New York City Transit

Type II Short Tie Blocks Embedded in a Concrete Invert



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New York City Transit

Type IIM Short Tie Blocks and Long Ties Embedded in a Concrete Invert

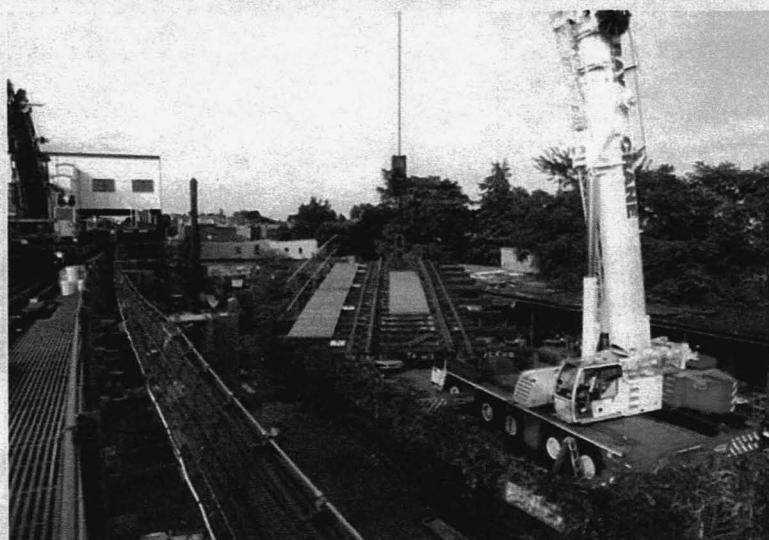
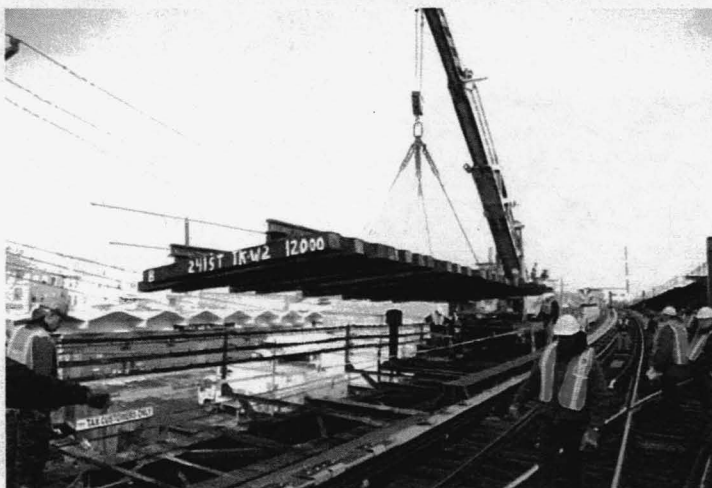


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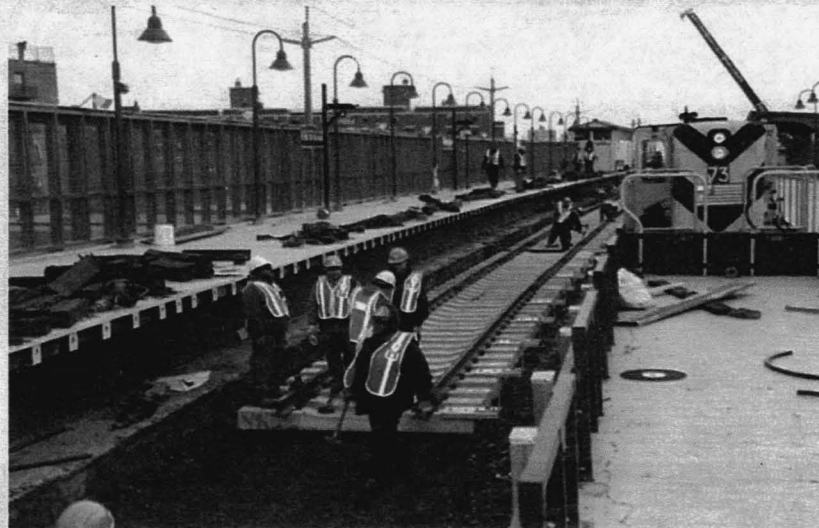


New York City Transit

Type III Elevated Track Panels



Type VI – Ballasted Track Panels



Type VII Long Crossties Resting on Ballast used in Yards

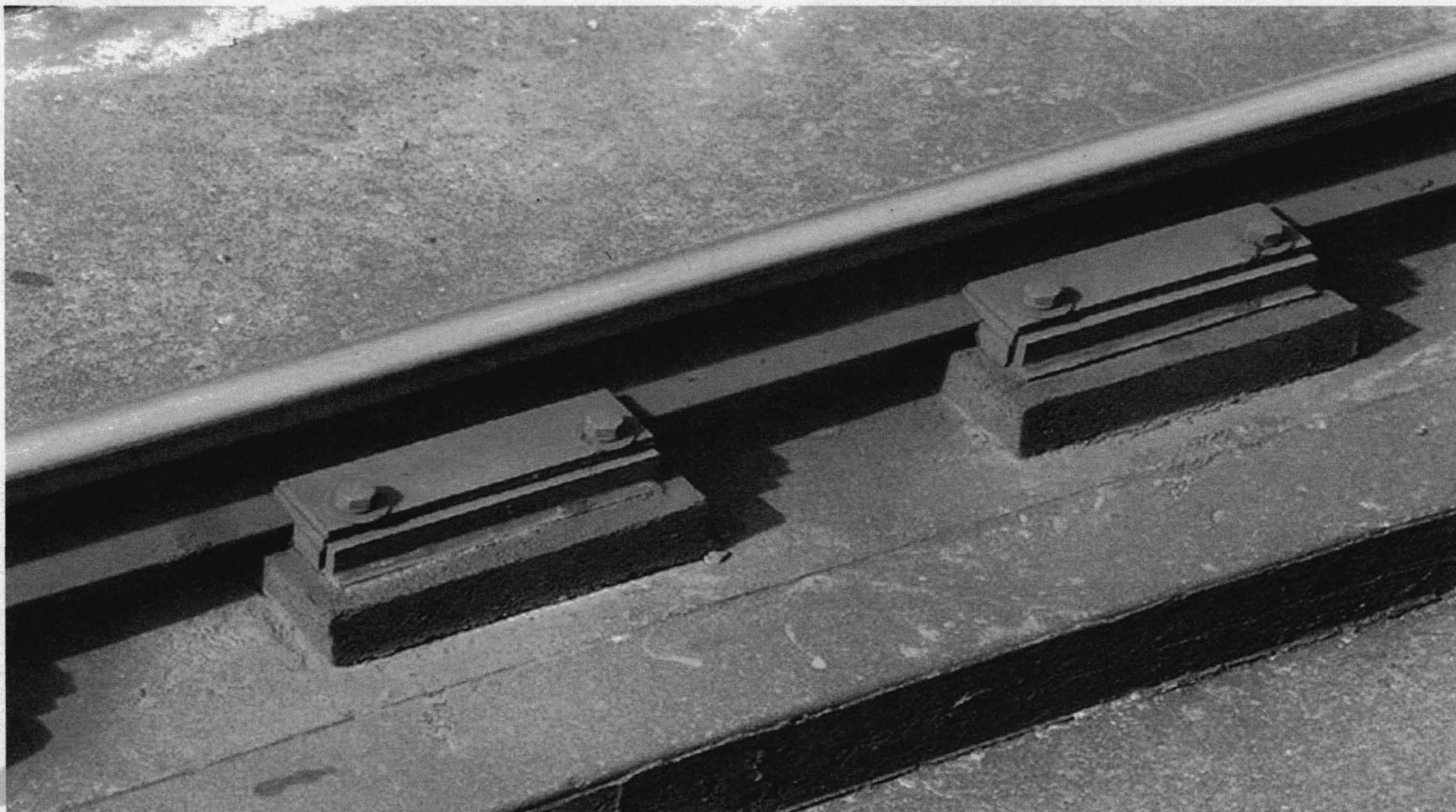


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 New York City Transit

Type VIIIIM Direct Fixation Track



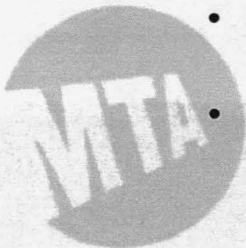
Benefits of Using In-House Forces

Flexibility

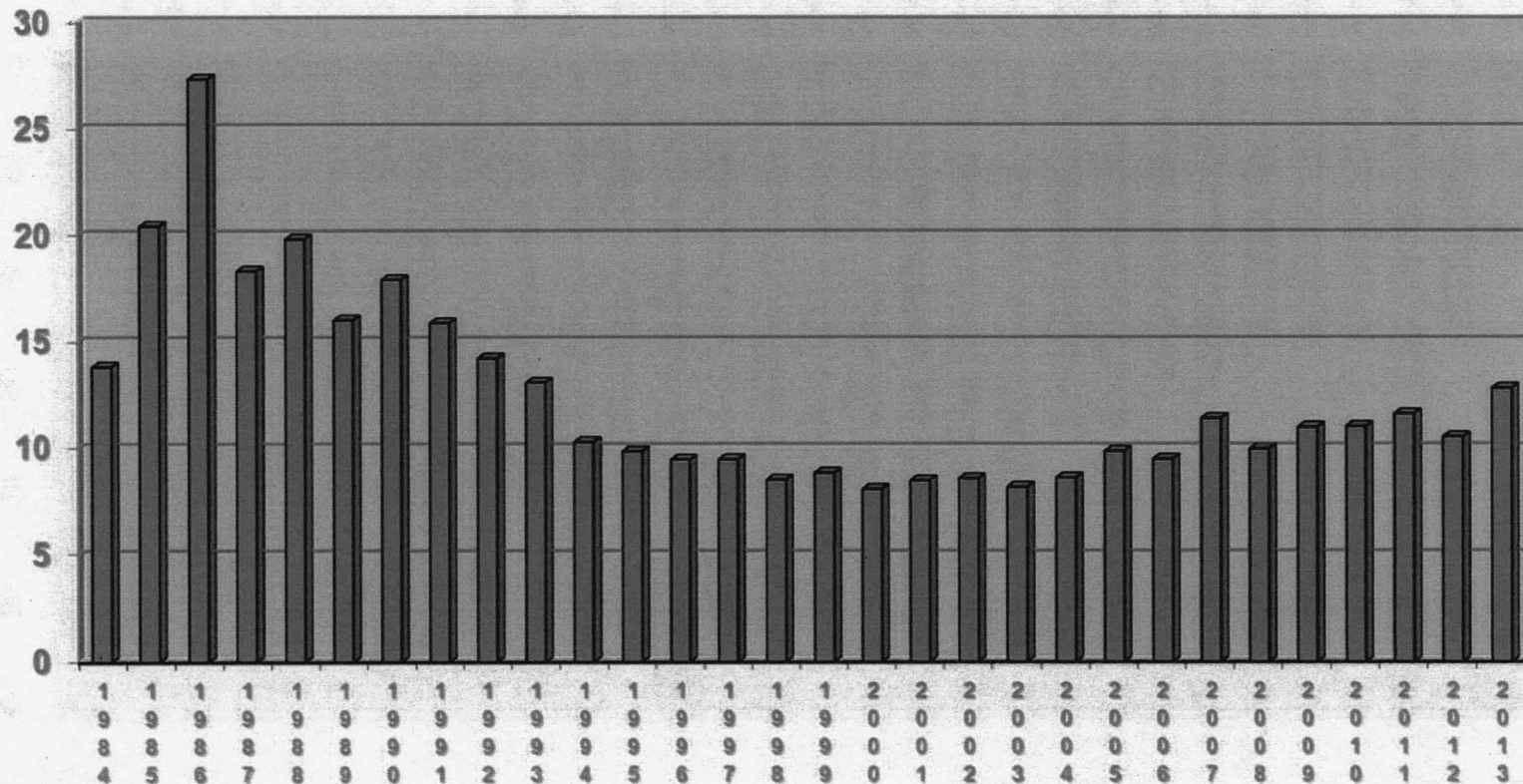
- the ability to change locations based on Track Access availability
- the ability to deploy work forces to gain efficiencies & productivity
- on-site track & switch fabrication capabilities (Linden Shop)

Cost Effective

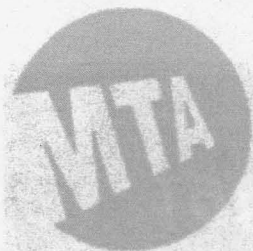
- no mobilization costs
- no AWOs, contractor's claims, etc.
- no contractor profit
- experienced supervisors with good knowledge of standards
- flagging performed by trained in-house personnel
- consistent workforce that produces a quality job



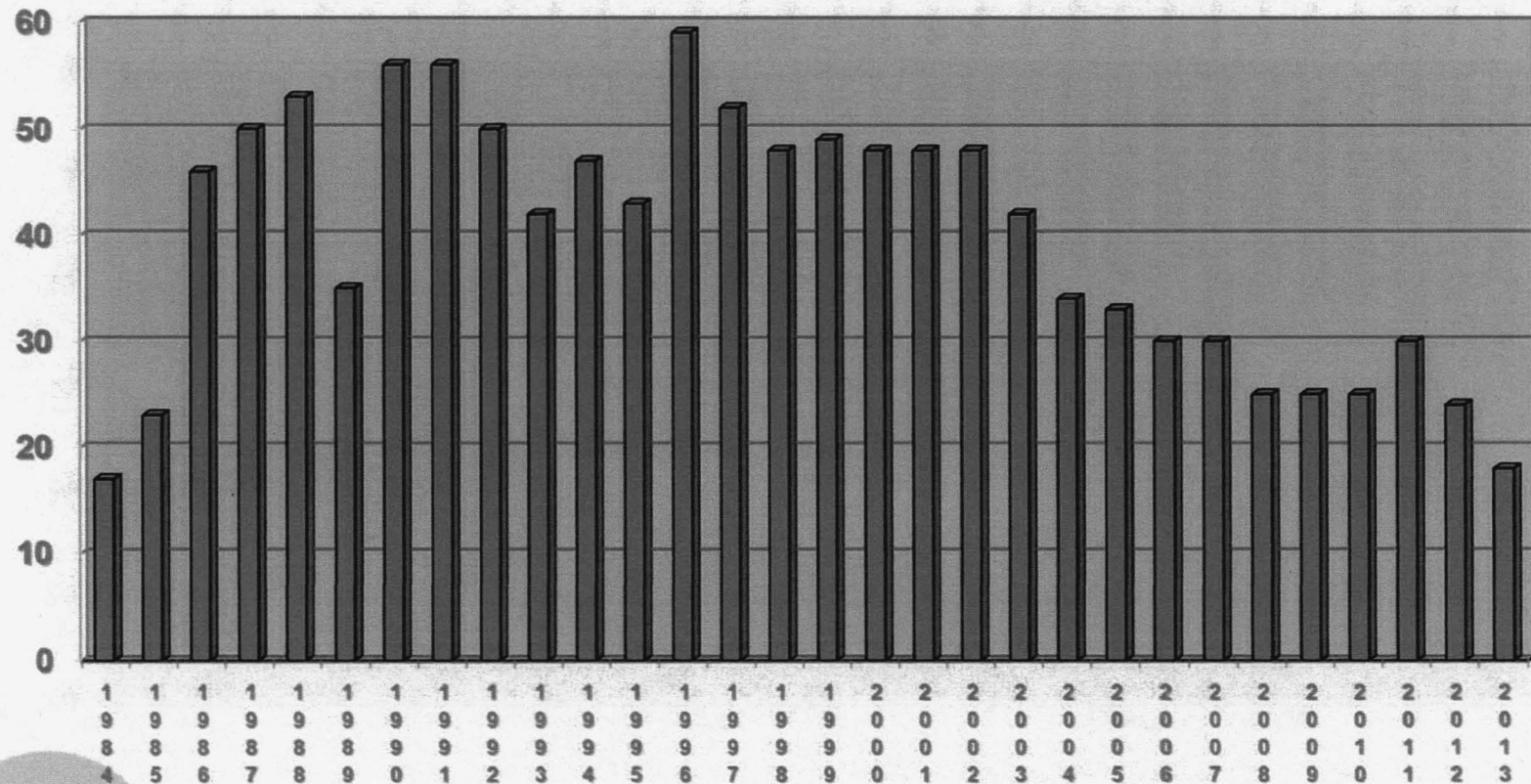
1984 – 2013 Mainline Track Reconstruction (Total: 372.25 Miles)



3-11



1984 – 2013 Mainline Switch Reconstruction (Total: 1206 Switches)



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Project Selection Process

- **Quadrennial Condition Survey Priorities**
- **Quarterly Track Geometry Car Findings – Automated**
- **Track Maintenance Inspections – Visual**
- **Track Access**

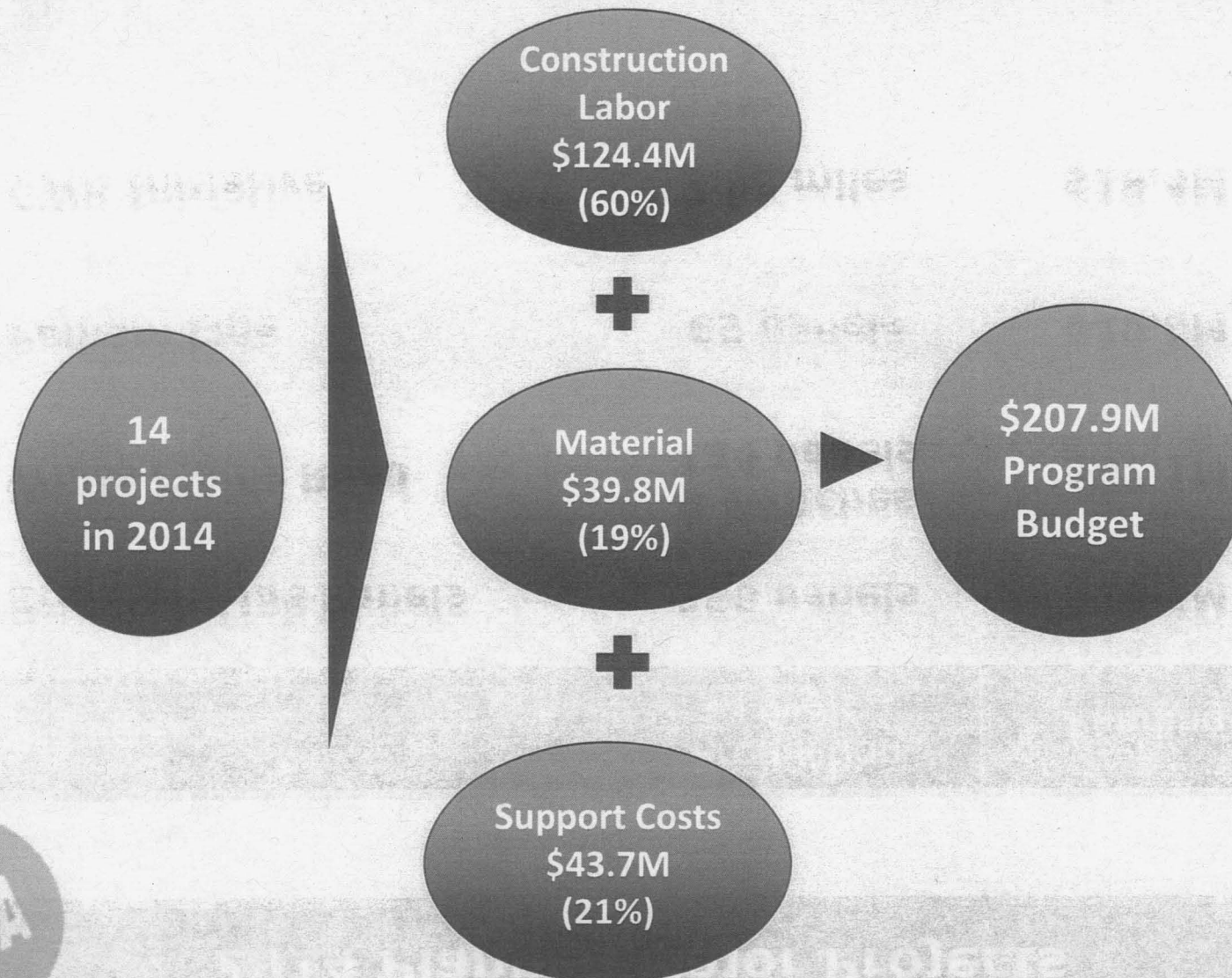


2010 – 2014 Capital Track & Switch Programs

Projects	Production Levels
Mainline Track Reconstruction	56 miles
Mainline Switch Reconstruction	126
Yard Track	2.5 miles
Yard Switches	31
CWR Initiative	8 miles



2014 Revised Track & Switch Programs' Budget



2014 Planned Major Projects

Projects	Production Levels	Funding
Brighton Line Panels	256 panels	\$28.4M
White Plains Road	9 switches 134 panels	\$37.1M
Pelham Line	65 panels	\$20.8M
CWR Initiative	2.58 miles	\$18.4M

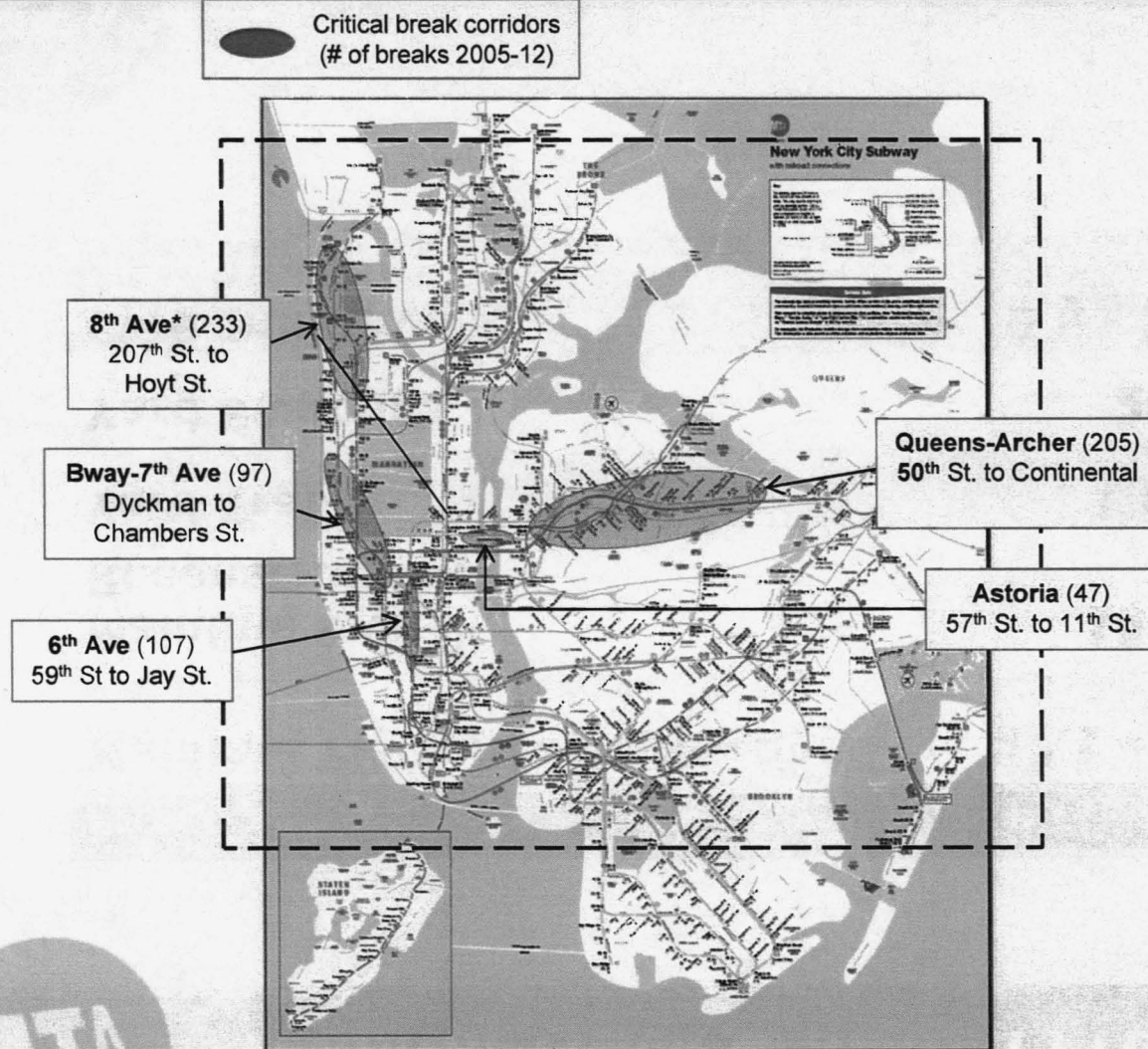


Proposed 2015 – 2019 Capital Track & Switch Programs

Projects	Production Levels
Mainline Track Reconstruction	57.1 - 68.7 miles
Mainline Switch Reconstruction	135 - 165
Yard Track	1.5 miles
Yard Switches	20 - 35
CWR Initiative	9.5 - 15.2 miles



CWR Initiative – a proposed CWR initiative targeting critical rail break corridors



Source: Broken rail data and the most recent Mainline Track Condition Survey, Track Engineering Division

Program scope

Install CWR, transit product and resilient fastener plates at locations identified as having the highest concentration of broken rails over the past 8 years*

Targeted program goals

- Cover over 122,000 track feet (~ 23 track miles)
- Reduce breaks at critical locations
- Eliminate water conditions
- Reduce maintenance via longer track life
- Improve high traffic track conditions
- Reduce noise/ vibration levels by 7-10dBA
- Conform with railroad and transit standards

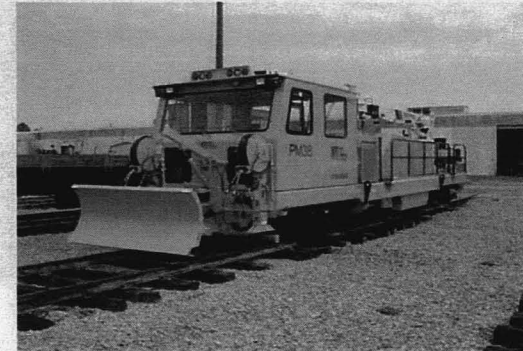
Scheduled Component Renewal Project (SCRCP)

- Cost effective approach to track renewal
- Replace failing fasteners and rails in areas where concrete and cross ties still have years of useful life remaining
- Applies to both subway and elevated track areas

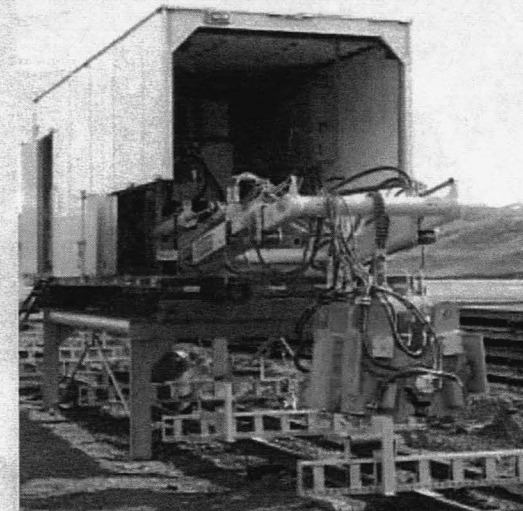


New Strategies/Construction Techniques

- Introduce Mechanized Equipment
- Procurement of Flash-Butt Welding Service Contract/Refurbishment of Welding Plant
- Introduce lighter more efficient power tools & more ergonomic tools
- Revised Work Procedures and Job Task Hazard Assessments
- Assign Dedicated Coordinator from Material Department



Prime Mover Super Utility Vehicle



Mobile Flash Butt Rail Welding Systems

Type III Work at Queensboro Plaza



BEFORE



AFTER



New York City Transit

Work at S/O Northern Blvd.



BEFORE



AFTER



APPENDIX



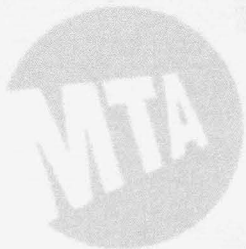
Track & Switch Elements

Assets	Universe
Mainline Track	659 miles
Mainline Switches	1,754
Non-revenue Track	41 miles
Yard Track	118 miles
Yard Switches	876



Average Useful Life of Mainline Track

Assets	Useful life	Mainline Track Miles / %
Subway, ballasted track	35 years	48 miles 7%
Subway, concrete invert	65 years	365 miles 55%
Concrete invert, outside	40 years	11 miles 2%
Ballasted track, outside	30 years	79 miles 12%
Elevated track (open deck)	25 years	156 miles 24%



Capital Program Oversight Committee

Long Island Rail Road
Track Program
February 2014



LIRR Capital Program

State of Good Repair - Track

LIRR Development of the 5-year Capital Track Program takes into consideration the following:

- Useful Life
 - Age
 - Level of Utilization
- Condition Assessment
- Track Inspection Reports
- Available Outages

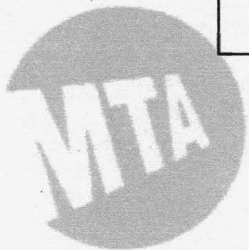
The LIRR will integrate recommendations of the Blue Ribbon Panel into the 2015-2019 Capital Program.



LIRR System Overview

- The Long Island Rail Road is comprised of approximately 515 miles of main line track on 11 branches serving Nassau and Suffolk Counties, and the boroughs of Brooklyn, Queens, and Manhattan.
- The majority of the LIRR Track Infrastructure consists of Wood Ties, Grade Crossings, Switches, Continuous Welded Rail (CWR), and Viaduct Track.

MAJOR TRACK ELEMENT	Useful Life	Quantity
Wood/Concrete Ties	35-50 Years	1,462,500
Grade Crossings	15-30 Years	295
Switches	25-30 Years	537
Continuous Welded Rail (CWR)	50 Years	1,016 miles
Viaducts Track Rail Fasteners	25 Years	60,680



Track Program - Capital Investments

Capital Program	Total Investments
1981 - 1991	\$128,400,310
1992 - 1999	\$323,087,392
2000 - 2004	\$269,464,927
2005 - 2009	\$255,760,757
2010 - 2014	\$283,200,000

Since inception, the MTA Capital Program has made \$1.26B investment in LIRR Track Program. This includes \$50.93M for the 2014 Annual Track Program.



2010-2014 Track Program

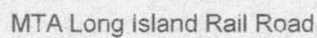
ELEMENT OF WORK		2010	2011	2012	2013	2014	2010-2014 TOTALS
Wood Ties (ea)	Actual	42,283	30,608	25,893	26,781		125,565
	Goal	42,283	28,500	23,100	26,310	43,440	163,633
Concrete Ties (ea)	Actual				11,897		11,897
	Goal				6,500	12,720	19,220
Grade Crossing Renewal (ea)	Actual	11	21	24	15		71
	Goal	11	21	24	15	11	82
Switch Replacement (ea)	Actual	9		9	9		27
	Goal	9		9	9	7	34
Continuous Welded Rail (CWR) (lf)	Actual	56,949	88,568				145,517
	Goal	56,949	88,568				145,517
Surfacing (miles)	Actual	103	113	94	86		396
	Goal	102	75	66	80	85	408
Field Welds (ea)	Actual	500	829	781	829		2,939
	Goal	541	400	687	700	800	3,128
Viaduct Rail Fasteners (ea)	Actual			7,832	12,104		19,936
	Goal			7,832	11,840		19,672
Total (\$)		\$57.36M	\$53.36M	\$53.53M	\$68.0M	\$50.93M	\$283.2M

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Note: An additional 28,636 rail fasteners were replaced on the Babylon Branch between Amityville/Copiague/Lindenhurst under the 2005-2009 Capital Program.

MTA Long Island Rail Road



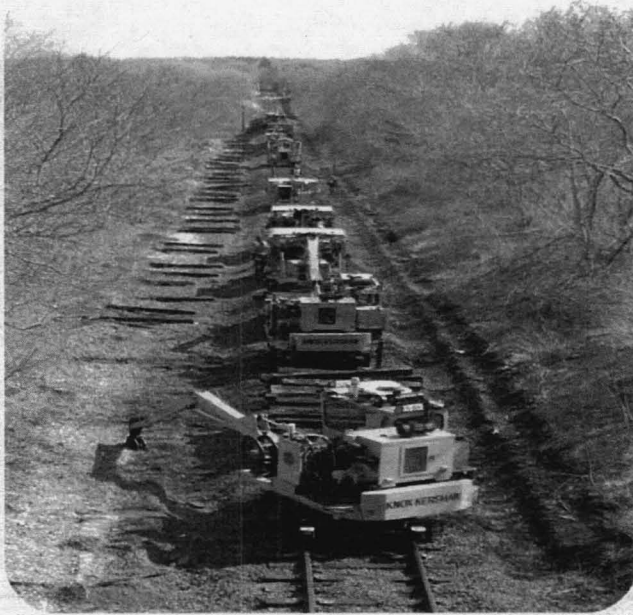
Proposed 2015-2019 Cyclical Track Program

MAJOR ELEMENT OF WORK	GOAL*
Wood Ties (ea)	210,000
Concrete Ties (ea)	25,000
Grade Crossing Renewal (ea)	70
Switch Replacement (ea)	50
Continuous Welded Rail (CWR) (LF)	160,000 (approx. 30 Miles)
Surfacing (miles)	400
Field Welds (ea)	7,000

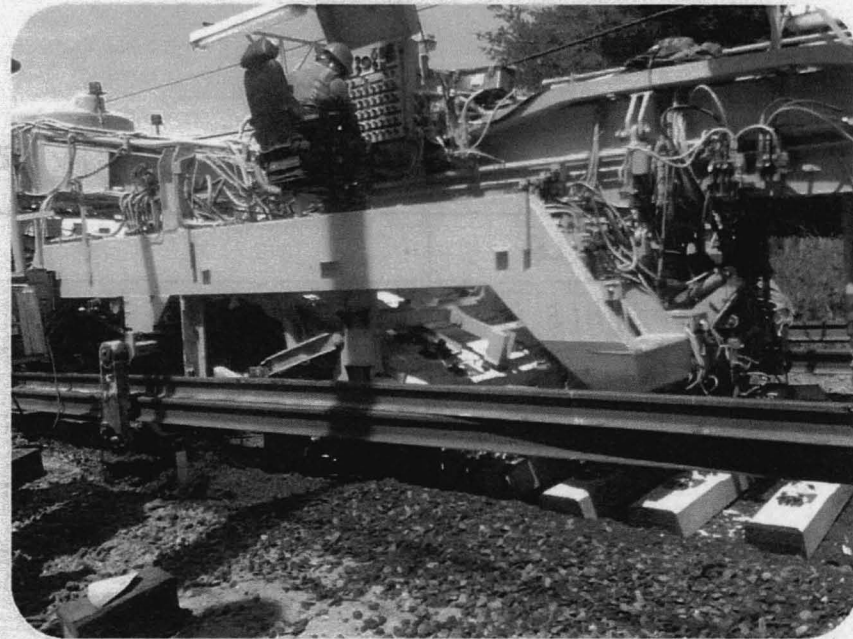
*Represents track investment need identified in 20 Year Needs Assessment. Program development for 2015-2019 is currently underway including the identification of a refined scope and estimate for the Track Program.



**Mechanized Wood Tie
Replacement Operations**



**Track Laying Machine (TLM)
Concrete Tie Installation**



The Track Program is heavily dependent on the use of specialized equipment to perform the work in the most efficient manner.

- The Mechanized Wood Tie Replacement operations involve of over a dozen pieces of equipment.
- The Track Laying Machine (TLM) provides a mechanized approach to the installation of concrete ties and replacement of existing rail.
- LIRR has also used third party supplied equipment such as the Shoulder Ballast Cleaner, Ballast Vacuum, and Rail Grinding Machines when it is more efficient and productive.

2010 - 2014 Track Construction Equipment

EQUIPMENT	Quantity	Each (\$)	Total (\$)
Spiker	2	\$347,253	\$694,506
Gondola	10	\$141,800	\$1,418,000
Tamper	1	\$2,750,000	\$2,750,000
Tie Remover	1	\$250,000	\$250,000
Hi-Rail Brush Chipper	1	\$103,260	\$103,260
Skid Steer	3	\$75,000	\$187,500
Compact Track Loader	1	\$73,625	\$73,625
Stabilizer	1	\$1,329,860	\$1,329,860
MoW Car Mover	1	\$193,249	\$193,249
Total			\$7,000,000

In addition to the actual track work, the 2010-2014 Capital Program included the purchase of \$7 Million in Equipment.



Skid Steer



Gondola

The LIRR has over 300 pieces of equipment used to maintain a State of Good Repair throughout the LIRR system



Spiker

MTA Long Island Rail Road



Larkfield Road Grade Crossing



Concrete grade crossings are utilized to increase their useful life to 30 years.



MTA Long Island Rail Road

Other Annual Track Program Operations



Switch Replacement



**Continuous Welded Rail
(CWR)**



Field Welding



Surfacing

MTA Long Island Rail Road

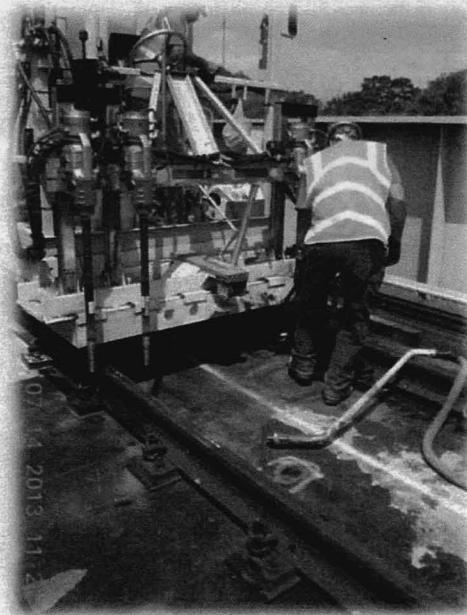


Replacement of Rail Fastener System on the Babylon Branch

- Between 2008 and 2013, the LIRR replaced all 48,572 rail fasteners originally installed in the mid 1970's with new custom designed rail fasteners that would fit on existing concrete pads (plinths), and provide a better quality ride.
- A total of 11.5 Miles of track was rehabilitated.



Direct Fixation Rail Fastener



Massapequa Park



Atlantic Branch Half-Ties Replacement Study/Design/Construction

SCOPE:

- This project includes an on-going study and design of a new half tie rail fastening system to be installed in the Atlantic Branch tunnel between Jamaica and East New York. This first phase of the project consist of the replacement approximately 10,000 linear feet of half-ties in the most critical locations.

SCHEDULE:

- Design Schedule Complete- July 2014
- Construction Schedule Start – November 2014
 Complete- May 2016

BUDGET:

- \$14.0M



Old Half-Ties

MTA Long Island Rail Road



New Half-Ties

MNR 2010-2014 Track & Turnout Capital Program

February 24, 2014



Track & Switch Elements

Item	New York ¹	Connecticut	Total
Mainline Track Miles	511	243	754
Mainline Switches	414	213	627
GCT Switches	159	-	159
Yard & Sidings Switches	312	129	441

¹ Does not include the Beacon (exempted) and Pascack Valley (maintained by NJT) Lines

This briefing will show comparative Connecticut data but focus on the tracks and switches in New York State.



MTA Metro-North Railroad

Average Track Life Values

Ballasted track – wooden ties:	35 years
Ballasted track – concrete ties:	10/50 years ¹
Ballasted Track – Azobe ties:	50 years
Concrete Slab track – Park Ave Viaduct:	20 years ²
Concrete Slab track – GCT:	20 years

¹ Concrete ties have a life expectancy of 50 years.

However, due to a manufacturing defect, some have failed at 10 years.

² The grout under the tie pads is failing. Working with manufacturers on better product.

2010-2014 Cyclical Track Program

	<u>NY</u>	<u>CT</u>	
Cyclical Track Program	\$64.2	\$39.9	million
Mainline Switch Renewal Program	\$52.7	\$10.9	million
West of Hudson Track Program	\$21.2		million
GCT Track & Switch Renewal	\$13.5		million



MTA Metro-North Railroad

2010-2014 Cyclical Track Program (East of Hudson¹)

Budget: \$64.2 million

Year	Continuous Welded Rail (miles)	Ties (each)	Surfacing (miles)	% Complete	Total (\$million)
2010	1.0	22,208	78	100	\$13.0
2011	1.8	22,520	83	100	\$12.4
2012	2.0	26,435	82	100	\$12.6
2013 ²	1.5	16,310	18	70	\$12.7
2014 ²	7.6	18,650	88	5	\$13.6
	13.9	106,123	349	375	\$64.2

¹ "East of Hudson" includes New Haven Line in New York State only.

² 2013 and 2014 Program has been delayed due to obligating capital forces in support of incidents and work to correct poor drainage.

2010-2014 Cyclical Track Program (Connecticut)

Budget: \$39.9 million

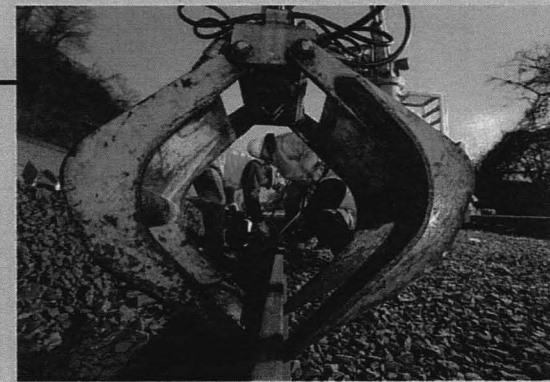
Year	Continuous Welded Rail (miles)	Ties (each)	Surfacing (miles)	% Complete	Total (\$million)
2010		9,044	14	99	5.2
2011		14,119	18	100	6.9
2012	5	5,996	7	103	8.3
2013		7,566	9	49	4.2
2014 ²	1.9	30,050	62		15.3
	6.9	66,775	108		39.9

¹ 2014 program only partially funded so far.

2014 ties projected includes the balance from 2013 that was postponed due to the production crew working in the Bronx.

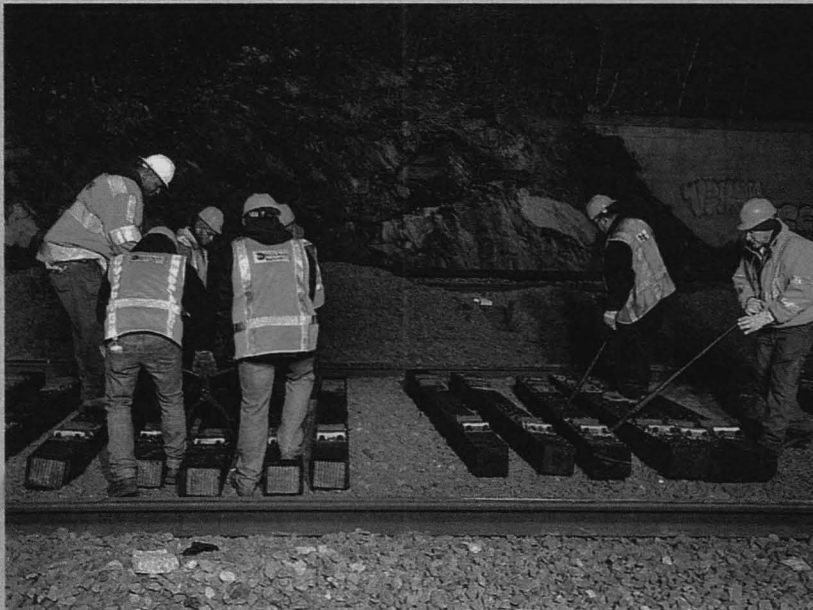
2014 Cyclical Track Program (NY) Rail

LOCATION	CITY	LENGTH (feet)	COMPLETED
CP 5 to CP 6	Mott Haven		
CP 8 to CP 10	Highbridge	3,200	Completed Jan 14
CP 10 to CP 11	Marble Hill	1,000	
CP 11 to CP 12	Spuyten Duyvil	800	
CP 12 to CP 19	Yonkers	3,200	
CP 35 to CP 40	Cortlandt	2,400	
CP 39 to CP 46	Peekskill	6,400	
CP 212 to CP 215	Mount Vernon	1,000	Completed Jan 14
CP 212 to CP 215	Mount Vernon	9,600	
CP 215 to CP 217	New Rochelle	3,300	
CP 223 to CP 229	Rye	9,200	
Total		Feet 40,100	
Total		Miles 7.6	



2014 Cyclical Track Program (NY) Ties

LINE	FROM	TO	LOCATION	CITY	TIES
New Haven	CP-217	MP 26.1	CP-217 to MP 26.1	New Rochelle, NY - Port Chester, NY	6,800
Hudson	MP 16.5	CP-19	MP 16.5 to CP-19	Yonkers	2,000
Hudson	CP-39	MP 45.3	CP-39 to MP 45.3	Peekskill	4,800
Hudson	CP-34	CP-35	CP-34 to CP-35	Croton-Harmon	1,100
Hudson	CP-33	CP-34	CP-33 to CP-34	Croton-Harmon	450
Hudson	CP-6	CP-10	CP-6 to CP-10	Highbridge - Marble Hill	3,300
					18,450



MTA Metro-North Railroad

2014 Cyclical Track Program (NY) Surfacing

Line	Miles
Hudson	31.0
Harlem	27.3
New Haven (NY State Only)	29.9
<hr/>	
Total	88.2



MTA Metro-North Railroad



2010-2014 Mainline Switch Program (NY)

Budget: \$52.7 million ¹

Year	# Switches	% Complete	Comments
2010	12	100	
2011	10	100	
2012	11	100	
2013 ²	14	50	Postponed 7 switches at CP-109
2014 ³	12		Includes 7 postponed switches from CP-109
Total	59		

¹ Includes CP-109 (new interlocking \$20.9 million) & material costs for next program. Also reflects high cost of switch renewal in 3rd rail territory.

² 2013 incident and drainage remediation utilized Capital forces.

³ Preliminary plan. Still working towards integrating it into the track outage plan.



2010-2014 Mainline Switch Program (CT)

Budget: \$10.9 million ¹

Year	# Switches	% Complete	Comments
2010	10	100	
2011	10	100	
2012	12	100	
2013	12	100	
2014 ¹	12		Projected
Total	56		

¹ Budget reflects what CT has funded 2010-2013. Awaiting 2014 funding decision.



MTA Metro-North Railroad

2014 Mainline Switch Program (NY)

Location	Location	# TO
CP-109	Bronx	7
CP-4	Harlem River	2
CP-5	Mott Haven	1
CP-35	Croton-Harmon	2
Total		12



MTA Metro-North Railroad

2010 – 2014 West of Hudson

Budget: \$19.4 million

YEAR	TIES	SURFACING (Miles)	Switches	% Complete
2010	16,318	29.6	1	100
2011 ¹	13,000	28	1	0
2012 Spring ²	12,922	22		100
2012 Fall ²	13,000	23	2	100
2013 ³	20,552	33	2	100
2014 ³	Done	Done	2	-
Totals	75,792	135.6	8	



¹ 2011 program scheduled for Fall 2011. Hurricane Irene hit August 2011. No programmed work done.

² 2011 program work done in Spring 2012. 2012 program work done in Fall 2012.

³ 2013 and 2014 program work done in Fall 2013.

2010 - 2014 Grand Central Track & Switch Renewal Program

Budget: \$13.5 million

YEAR	SWITCHES	% Complete
2010	8	100
2011	10	100
2012	12	100
2013	8	100
2014	6	50
<hr/>		
Total	44	



MTA Metro-North Railroad

Goal and Project Selection Process

- Expected Life vs Actual Condition
- Track Geometry Car Findings
- Transportation Technology Center Track Loading Vehicle Findings
- Visual Track Maintenance Inspections



MTA Metro-North Railroad

Proposed 2015 – 2019 Cyclical Track Program (East of Hudson)

Continuous Welded Rail:

25 Track miles

Ties:

116,300 Ties

Surfacing:

600 Track miles

Mainline Switches:

68 Regular Switches

2 Double Slip Switches

Grand Central Terminal Switches:

27 Regular Switches

8 Double Slip Switches

5 Diamond Crossings



MTA Metro-North Railroad

Proposed 2015 – 2016 Cyclical Track Program ¹ (Connecticut)

Continuous Welded Rail:

0 Track miles

Ties:

27,500 Ties

Surfacing:

81 Track miles

Mainline Switches:

38 Regular Switches

¹ 2015-2016 program is not funded. No program for out years yet.



MTA Metro-North Railroad

Proposed 2015 – 2019 Cyclical Track Program (West of Hudson)

Continuous Welded Rail:

5 Track miles

Ties:

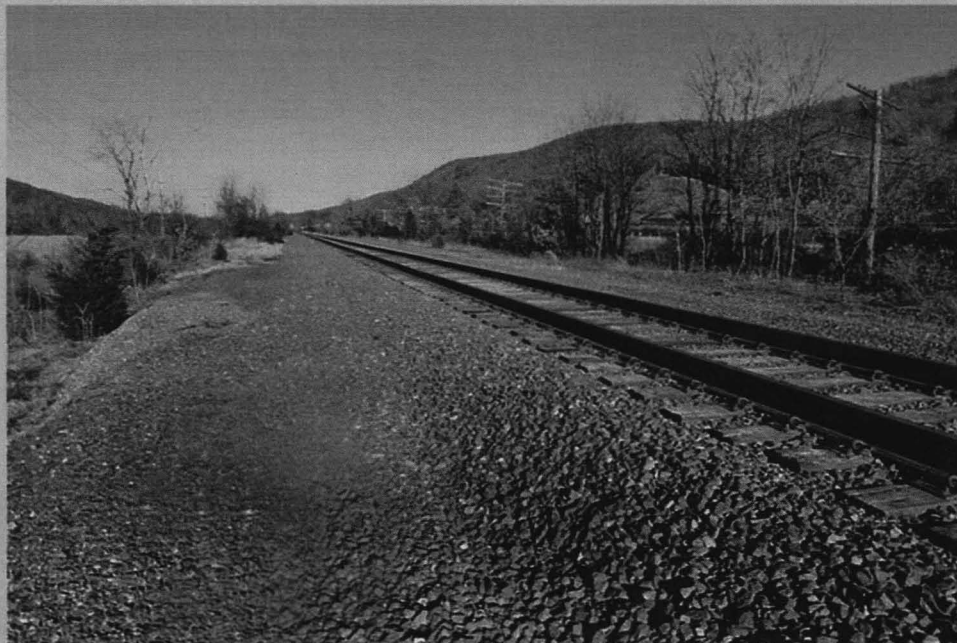
45,000 Ties

Surfacing:

180 Track miles

Mainline Switches:

11 Regular Switches



MTA Metro-North Railroad

New Strategies/Construction Techniques

- **Ground Penetrating Radar** to ascertain roadbed conditions deep beneath track.
- **Rail grinding machines** to prolong life of rail.
- **TTCI Track Geometry Vehicle** to make track measurements under load. Done quarterly.
- **Addition of 2 surfacing crews** to allow more work



Photo Sam Beck



MTA Metro-North Railroad

- **Railvacs** to speed track repairs.

February 2014



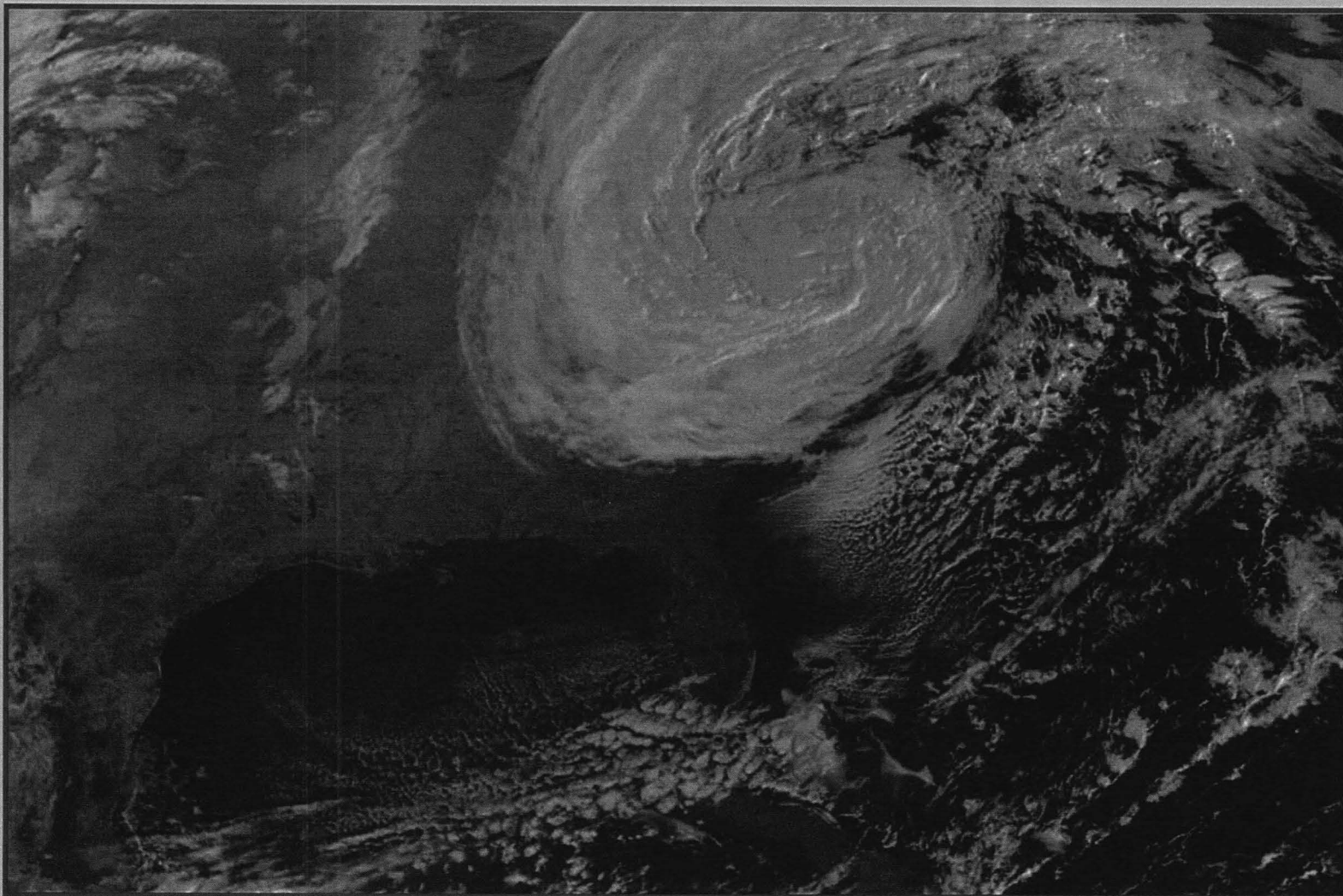
4-1

Building Back Better

The MTA & Superstorm Sandy



This is What Sandy Looked Like on October 29, 2012



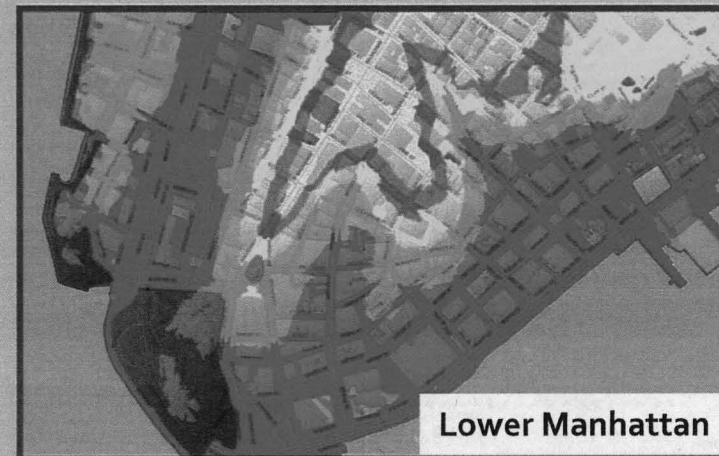
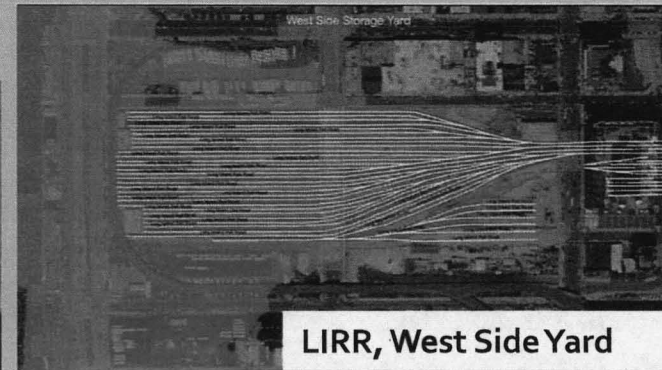
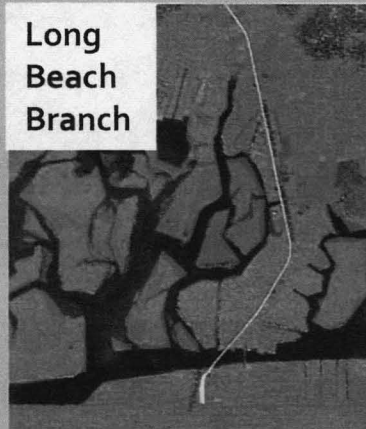
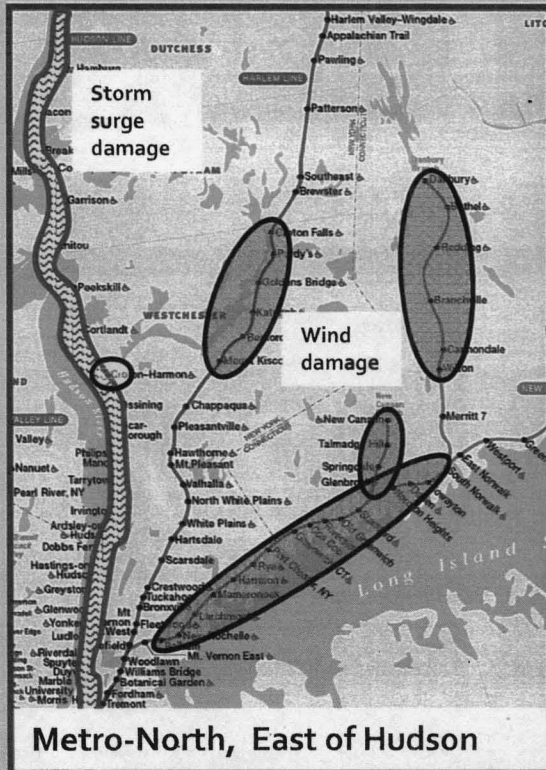
Building Back Better
The MTA & Superstorm Sandy

(2)



And This is What We Looked Like to Sandy...

4 - 3



Building Back Better
The MTA & Superstorm Sandy

3

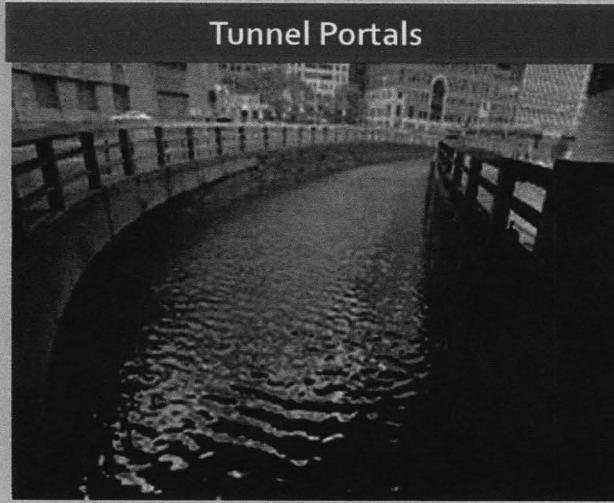


Sandy's Targets Included:

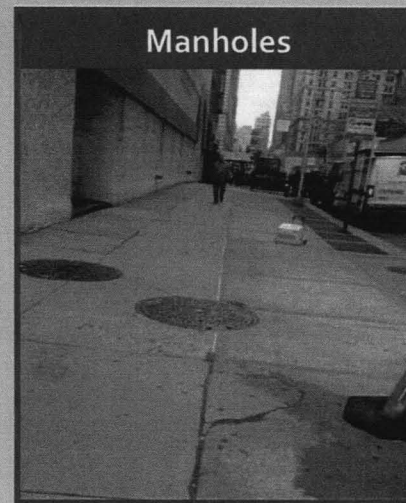
Stairways



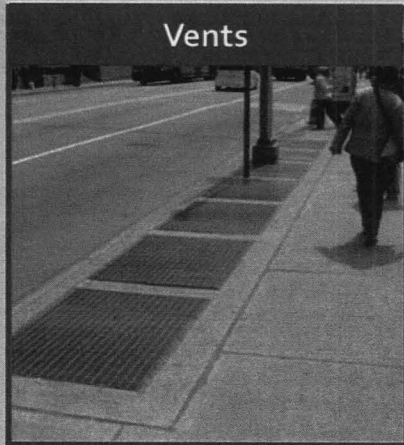
Tunnel Portals



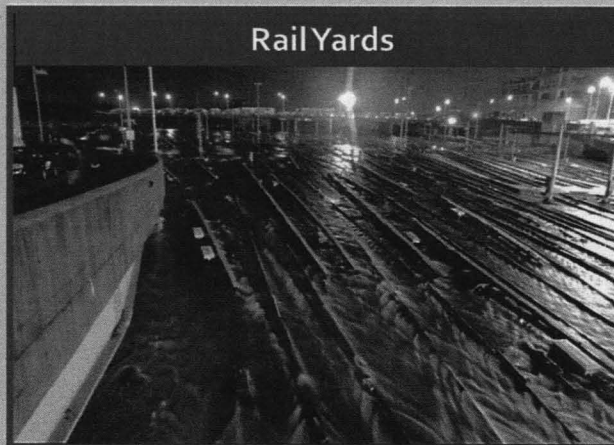
Manholes



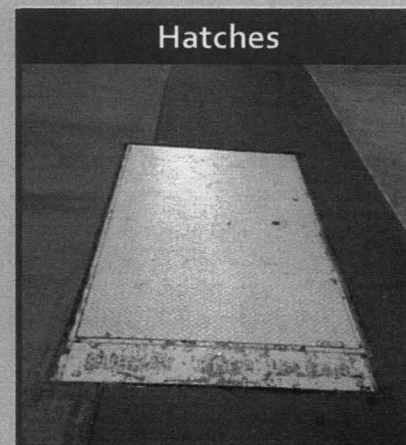
Vents



Rail Yards



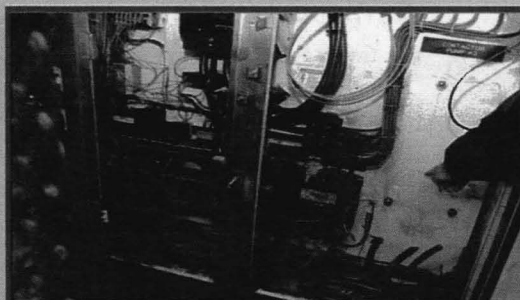
Hatches



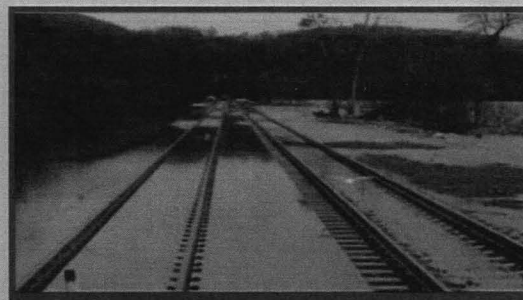
Damage Was Catastrophic Across the System



B&T Queens Midtown Tunnel



Shorted electrical equipment



Metro-North Hudson Line



Destroyed pump control



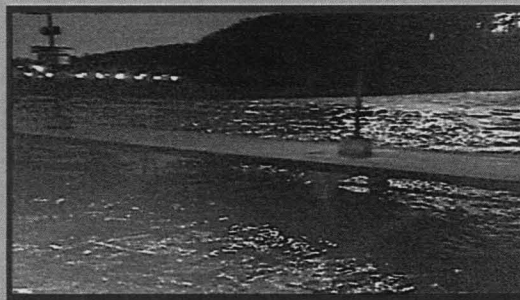
NYC Transit South Ferry



Failed signals



LIRR West Side Yard



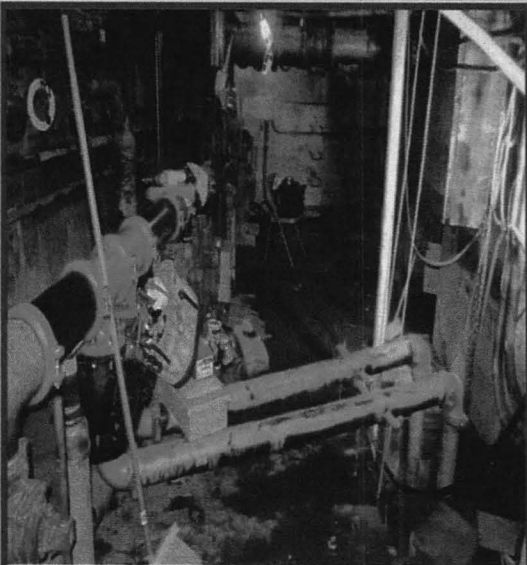
Metro-North Spuyten Duyvil Station



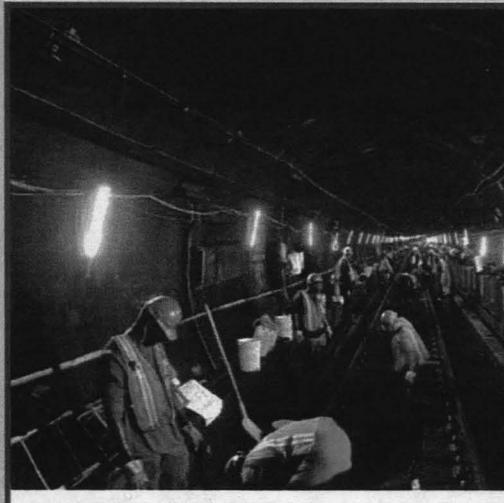
Flooded track and equipment

Project Development Steps

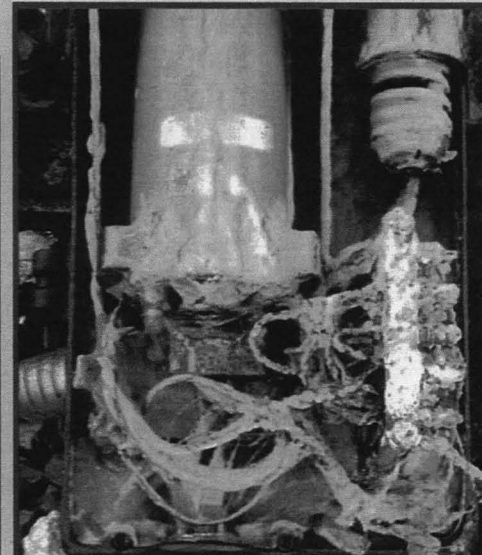
- Assess damage
- Repair/replace determination
- Evaluate shut-down and packaging scenarios



Damaged pump equipment,
Hugh L. Carey Tunnel



Work in Greenpoint Tube



Corroded Metro-North
Switch Machine

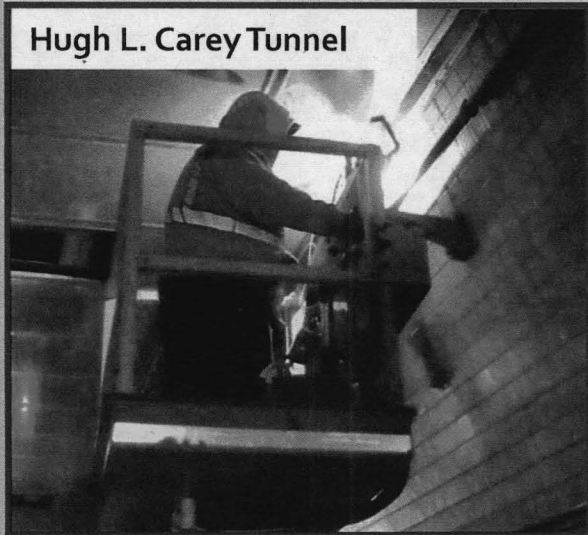
An Unprecedented Portfolio of Storm Recovery and Resiliency Work is Underway for all MTA Agencies

- **36** projects in construction, total value of **\$578m**
- **151** projects in planning, design, or procurement
- **\$777m** in contracts underway

**B&T eligible for FEMA;
all other agencies eligible for
FTA Emergency Relief**

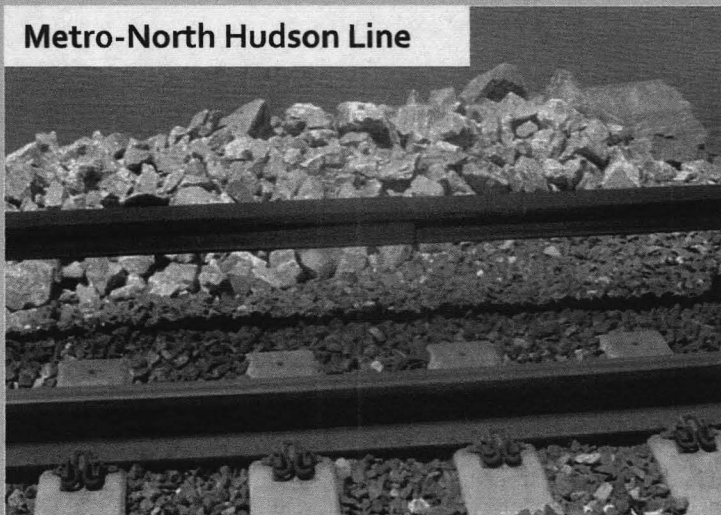
On-Going Work

Hugh L. Carey Tunnel

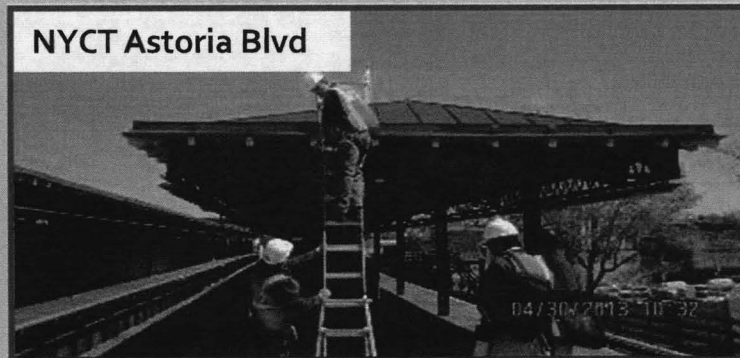


LIRR Long Beach Yard

Metro-North Hudson Line



NYCT Astoria Blvd



Federal Funding for Recovery and Resiliency Efforts

Federal Transit Administration

- FTA has allocated \$3.8 billion to the MTA.
- Grants have been executed for just over \$1 billion
- FTA holding competition for \$3 billion for resiliency projects

FEMA

- \$12m approved to date
- Negotiations underway for costs to repair and fortify tunnels

View Print

Page 1 of 110

DOT



FTA

U.S. Department of Transportation

Federal Transit Administration

Application

Recipient ID:	1786
Recipient Name:	NEW YORK METROPOLITAN TRANSPORTATION AUTHORITY
Project ID:	NY-44-X007-00
Budget Number:	1 - Budget Approved
Project Information:	NY MTA Sandy Relief \$5324 - Recovery

Part 1: Recipient Information

Project Number:	NY-44-X007-00
Recipient ID:	1786
Recipient Name:	NEW YORK METROPOLITAN TRANSPORTATION AUTHORITY
Address:	347 MADISON AVENUE 7TH FLOOR, NEW YORK, NY 10017 3706

Building Back Better

The MTA & Superstorm Sandy

9

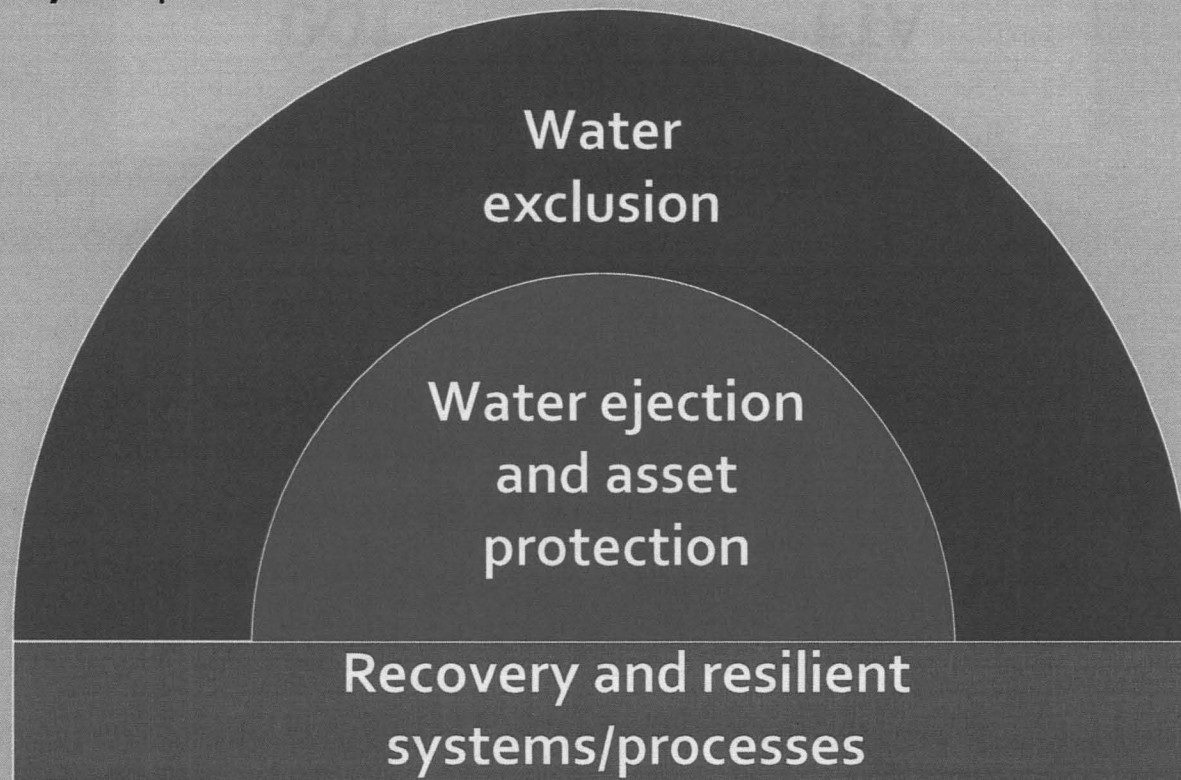


Resiliency Approach

Protective Measures - keep water out

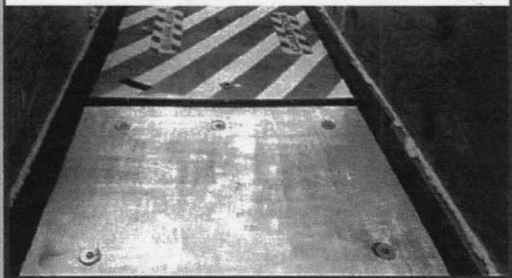
Asset Protection - minimize damage if water enters system

Recovery - expedite service restoration

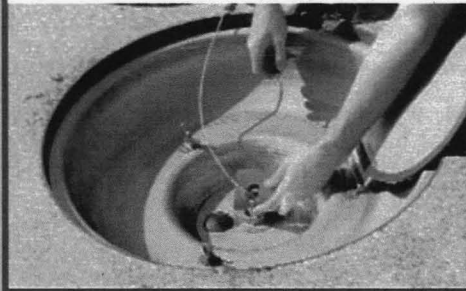


Resiliency Concepts

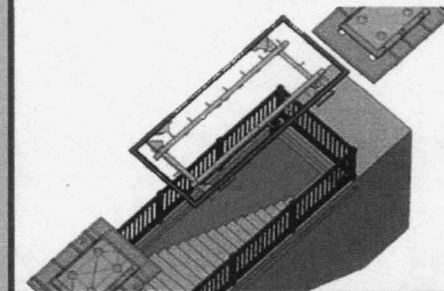
Sidewalk Vent Cover



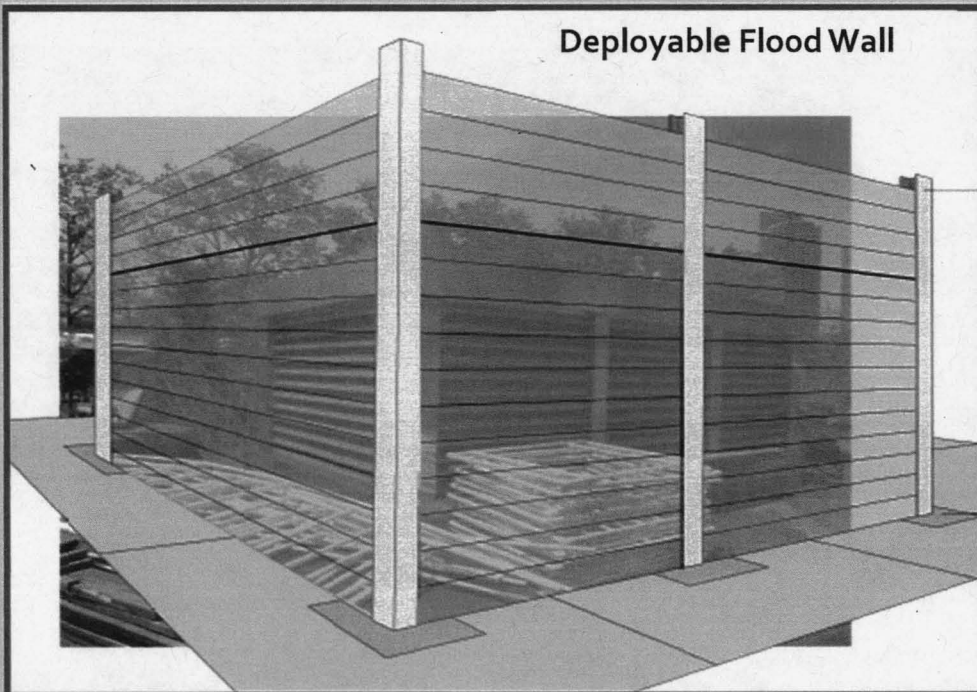
Manhole Inserts



Deployable Staircase Cover



Deployable Flood Wall



Trap Bag Barrier



Water-filled Cofferdam



MTA Capital Program Commitments & Completions

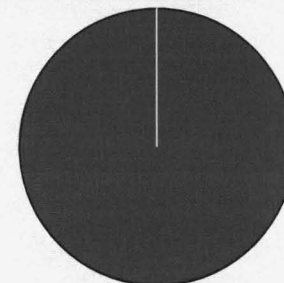
through January 31, 2014

Capital Projects – Major Commitments – January 2014

55 major commitments are planned for 2014 and three are being reported on through January. All January goals were made including a 276 standard bus commitment for NYCT. All major commitments year to date for 2014 are on-time.

Agencies have committed a total of \$405 million through January with a year-end goal of \$6.5 billion. The year to date shortfall of \$30 million is due to several slips at NYCT.

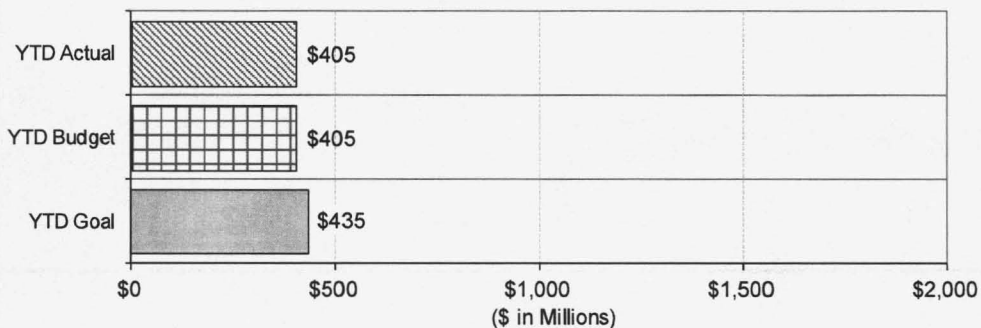
Year-to-Date Major Commitments



	Count	Percent	Change from Prior Month
GREEN = Commitments made/forecast within Goal	3	100%	↑ 3
YELLOW = Commitments delayed beyond Goal (already achieved)	0	-	-
RED = Commitments delayed beyond Goal (not yet achieved)	0	0%	-
	3	100%	↑ 3

Budget Analysis

2014 Annual Goal	\$6,545	(\$ in millions)
2014 Annual Forecast	100%	of Annual Goal
Left to Complete	94%	(\$6,124)



Year-to-Date Agency Breakdown

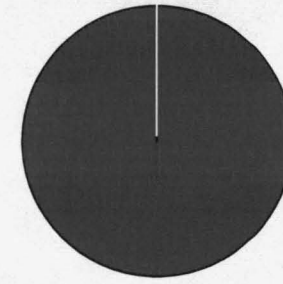
	Prior month variance		
	GREEN	YELLOW	RED
New York City Transit			
1	+1 GREEN	---	---
Long Island Rail Road			
2	+2 GREEN	---	---
Metro-North Railroad			
	---	---	---
Bridges and Tunnels			
	---	---	---
Capital Construction Company			
	---	---	---
MTA Bus Company			
	---	---	---
MTA Police Department			
	---	---	---

Capital Projects – Major Completions – January 2014

46 major completions are planned for 2014 and four are being reported on through January. Completions in January include the 72nd Street Structures contract for 2nd Avenue Subway and the new Mezzanine at the Fulton Transit Center. All major completions year to date in 2014 are on-time.

Agencies have completed a total of \$749 million through January with a year-end goal of \$5.7 billion. The year to date shortfall of \$5.7 billion is mostly due to minor slips at NYCT that include track completions and delivery of new subway cars.

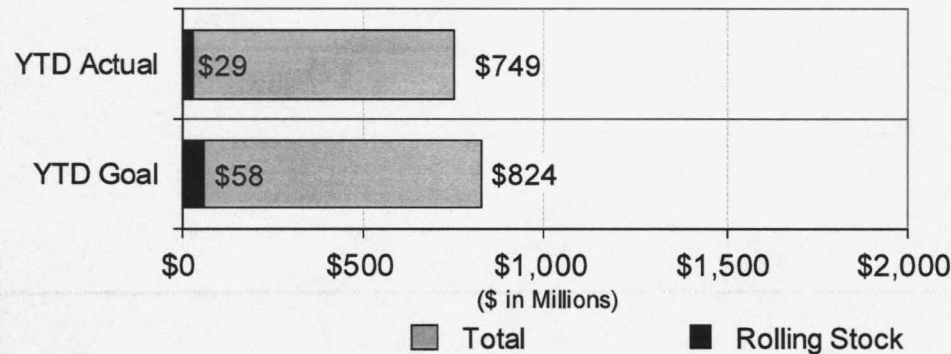
Year-to-Date Major Completions



	Count	Percent	Change from Prior Month
GREEN = Completions made/forecast within Goal	4	100%	↑ 4
YELLOW = Completions delayed beyond Goal (already achieved)	0	-	-
RED = Completions delayed beyond Goal (not yet achieved)	0	-	-
	4	100%	↑ 4

Budget Analysis

2014 Annual Goal	\$5,721	(\$ in millions)
2014 Annual Forecast	100%	of Annual Goal
Left to Complete	87%	(\$4,992)



Year-to-Date Agency Breakdown

	Prior month variance		
	GREEN	YELLOW	RED
New York City Transit			
1	+1 GREEN	---	---
Long Island Rail Road			
	---	---	---
Metro-North Railroad			
1	+1 GREEN	---	---
Bridges and Tunnels			
	---	---	---
Capital Construction Company			
2	+2 GREEN	---	---
MTA Bus Company			
	---	---	---
MTA Police Department			
	---	---	---

Status of MTA Capital Program Funding

Capital Funding (January 31, 2014)

\$ in millions

Capital Program

2010-2014

\$9,995

\$24,823

2005-2009

\$22,109

\$2,483

1982-2004

\$55,265

← \$5

0%

25%

50%

75%

100%

■ Received

■ Remainder

Capital Funding Detail (January 31, 2014)

\$ in millions

2005-2009 Program

Federal Formula and Flexible Funds
Federal New Start
Federal Security
Federal Other
Federal ARRA - Stimulus
City of New York
City #7 Line Extension Funds
MTA Bus Federal and City Match
Asset Sales and Program Income
State Transportation Bond Act
MTA Bonds (Including LGA)
B&T Bonds
Bonds from New Sources
Other (Including Operating to Capital)

Funding Plan	Receipts			
	Current	Thru December	This month	Received to date
	\$5,186	\$5,186	\$ -	\$5,186
	2,810	1,832	-	1,832
	322	245	(3)	242
	11	11	-	11
	654	654	-	654
	418	409	-	409
	2,367	1,961	19	1,980
	149	142	-	142
	1,213	594	-	594
	1,450	1,064	-	1,064
	3,039	3,039	-	3,039
	1,221	1,221	-	1,221
	5,624	5,624	-	5,624
	128	117	(5)	112
Total	24,592	22,098	11	22,109

2010-2014 Program

Federal Formula, Flexible, Misc
Federal High Speed Rail
Federal Security
Federal RIFF Loan
City Capital Funds
State Assistance
MTA Bus Federal and City Match
MTA Bonds (Payroll Mobility Tax)
Other (Including Operating to Capital)
B&T Bonds
Hurricane Sandy Recovery
Insurance Proceeds/Federal Reimbursement
PAYGO
Sandy Recovery MTA Bonds
Sandy Recovery B&T Bonds

Funding Plan	Receipts			
	Current	Thru December	This month	Received to date
	\$5,834	\$3,570	\$ -	\$3,570
	295	295	-	295
	207	87	13	100
	2,200	-	-	-
	777	309	35	344
	770	150	-	150
	132	20	-	20
	10,503	3,834	2	3,836
	1,496	394	14	408
	2,079	361	-	361
	9,431	26	886	912
	160	-	-	-
	758	-	-	-
	175	-	-	-
Total	34,818	9,045	950	9,995

CPOC COMMITTEE CONTRACT CHANGE ORDER REPORT*
(FOR INFORMATION ONLY)

Agency	Contract Number	Contract Description	Base Contract Cost	Change Order Number	Date of Change Order Award	Change Order Description	Change Order Cost	Percentage of Change Order Cost to Base Contract Cost
NYC Transit	C-34768	Rehabilitation of elevated structure from Hammels Wye to Rockaway Park and Six Bridges	\$31,765,000	23	12/9/2013	Removal of concrete encasements from bottom flange latitudinal girders at various intersections	\$410,000	1.29%
NYC Transit	C-33850	Steinway Tube Duct Bank Rehabilitation and Circuit Breaker Construction in Manhattan and Queens	\$23,120,000	20	11/14/2013	Replacement of bolts and lead caulking in Steinway tube	\$708,000	3.06%
MNR	66586	Engineering and design services for the 86th St. Substation and 110th St. Reactors	\$1,056,669	5	12/17/2013	Provide additional construction support services	\$282,088	26.69%
MNR	41088A	Design of Upper Harlem Line Substation Replacement	\$1,729,717	9	10/18/2013	Provide additional construction support services	\$434,978	25.15%
B&T	BB-45	Replacement of Switchgear and Power Distribution System at the BBT	\$43,650,000	NPCO 14, 15, 16, 17	10/9/2013	To relocate generator panels and associated power/control cables, purchase/install a PLC card upgrade (memory upgrade) for the GIVB Tunnel Ventilation System, upgrade the Motor Control Center (MCC) Damper Interlock, and to furnish, install, test and commission two additional power-monitoring workstations	\$362,500	0.83%
B&T	3000000719	Traffic Engineering Services on an As-Needed Basis (Riding on NYCT Contract CMM-1483)	\$200,000	CO 2	10/30/2013	Add \$100,000 to PO (\$70K in 2013 and \$30K in 2014) to allow issuance of Task 1A, Expanded traffic study at QMT (Task 1A is \$98,750)	\$100,000	50.00%
B&T	PSC-07-2817	PSC-07-2817 Design Services for Project TN-49, Seismic Study and Suspended Span Deck Replacement Feasibility Study for the TNB	\$3,690,077	AM 3	12/12/2013	The Contract required PTG to prepare construction documents and perform CSS during the repair of structural elements on the suspended spans under Project TN-85C. During the course of Project TN-85C construction there have been more than 265 steel repair locations identified than were originally anticipated. This has resulted in 300 additional shop drawings submitted. Furthermore, several additional designs were required to address field conditions. Therefore, additional CSS services and funding are required to address the remaining work to be performed. Extend the period of performance one year through July 31, 2014.	\$270,544	7.33%
B&T	AW-36-RFK	AW-36-RFK, Furnish, Deliver Install and Text Fiber Optic Network upgrades at the RFK	\$4,524,436	AM 1	12/10/2013	Run power and communications to new maintenance facility RK-65	\$594,327	13.14%
MTACC	C-26505	Furnishing and Installing Finishes and Systems - Number 7 Flushing Line Extension	\$513,700,497	50	10/17/2013	Additional electrical work related to mechanical storage rooms	\$652,000	0.13%
MTACC	C-26505	Furnishing and Installing Finishes and Systems - Number 7 Flushing Line Extension	\$513,700,497	67	10/30/2013	Revisions to chillers to improve access for maintenance	\$590,000	0.11%
MTACC	C-26505	Furnishing and Installing Finishes and Systems - Number 7 Flushing Line Extension	\$513,700,497	71	12/31/2013	Modify track for additional clearance at CC1 and CC2 Tunnels, Site L	\$482,000	0.09%
MTACC	C-26505	Furnishing and Installing Finishes and Systems - Number 7 Flushing Line Extension	\$513,700,497	49	10/3/2013	Relocation of CCTV Equipment	\$255,000	0.05%
MTACC	CM014A	GCT Concourse and Facilities Fit-Out	\$43,502,000	9	10/3/2013	Distribution Panels for Temporary Construction	\$413,124	0.95%
MTACC	CH053	Construct Harold Structures Part 1	\$139,280,000	117	10/1/2013	Microtunnel Run 6 & Observation Shafts	\$340,500	0.24%
MTACC	CM013	50th Street Ventilation Facility	\$94,355,000	31	10/3/2013	300 Park Drain in Utility Chase, 280 Park Elevator, Revised CW piping resolution of other issues	\$732,000	0.78%
MTACC	CQ032	Plaza Substation & Queens Structures	\$147,377,000	34	10/31/2013	Replenishment of Temporary Facilities Allowance	\$500,000	0.34%
MTACC	CH054A	Harold Structures Part IIA	\$21,777,777	37	11/13/2013	Procurement of 700kW Generator	\$295,150	1.36%
MTACC	CQ032	Plaza Substation & Queens Structures	\$147,377,000	35	11/26/2013	Additional Quantities of LBP Abatement in the 63rd St. East Bound Tunnel	\$630,000	0.43%
MTACC	CQ032	Plaza Substation & Queens Structures	\$147,377,000	37	12/2/2013	Steel Fabrication/Delivery and Rock Excavation for the 63rd Street Tunnel Extension	\$746,489	0.51%

*Capital change order value \$250,000 to \$750,000, and change orders from \$50,000 to \$250,000 but over 15% of the adjusted contact amount (4th Quarter 2013)