



MTA Project Deliverables

Final Report Pursuant to Section 1279-f of the Public Authorities Law

July 31, 2019

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Section 1: MTA Transformation Plan

June 30, 2019

The MTA and AlixPartners have created this Transformation Plan to respond to NY State's mandate to produce a reorganization plan by June 30, 2019

- The New York State Legislature directed the MTA to develop a personnel and reorganization plan by June 30, 2019 (under Section 1279-f of the New York Public Authorities Law, the "Transformation Plan"). Section 1279-f also requires that the plan be approved by the board no later than July 30, 2019
- The MTA and AlixPartners have prepared this Transformation Plan which covers recommendations for MTA-wide reorganization activities, improvements to business processes, and other cost reduction opportunities
- AlixPartners conducted this assessment through a variety of methods across common support functions such as Budget & Accounting, Construction, Human Resources, Information Technology, Procurement, Legal, etc.
- To support the Transformation Plan findings and recommendations, AlixPartners interviewed more than 100 MTA employees representing all Agencies and functions, including leadership from all areas of the enterprise
- In addition, AlixPartners reviewed select opportunities that could be related to the consolidation effort in order to identify additional opportunities; these include operations and maintenance activities within the Agencies as well as select sourcing, process improvement or other opportunities
- This assessment of the MTA, conducted over the course of 12 weeks prior to the June 30 deadline, was focused and limited in scope, is not necessarily exhaustive and does not represent all of the cost savings opportunities within the MTA
- The MTA will require comprehensive and detailed opportunity assessment and implementation planning if it wants to activate this Transformation Plan and achieve the desired benefits
- To achieve the cost savings opportunities identified, based on the size and scope of the MTA, the Transformation Plan may require the MTA to seek third party implementation support such as initiative planning and design, project management, benefits tracking and other services

The MTA seeks to fundamentally change itself via a transformation, in as short a period of time as possible, to set the stage for near-term and on-going performance improvements

This Transformation Plan seeks to answer a set of critical questions:

- **Why:** The MTA seeks to significantly improve service levels across the network, which will require a sustainable improvement in business performance and cost reduction
- **What:** In order to accomplish this goal, the MTA and the Board must transform the ways it does business to become more efficient and effective; this transformation will be challenging to implement due to size and complexity of the MTA in conjunction with certain constraints
- **How:** This transformational effort relies on six significant changes including:
 1. Refocusing Agency responsibilities on safety, operations and maintenance; consider merger of all Bus operations and future review of separating Subway and Bus
 2. Centralization of Construction & Development function across Agencies and across the lifecycle of capital projects
 3. Creation of new central Engineering function to set standards ensuring quality and sustainability of infrastructure
 4. Creation of new central Customer Communication function to create clear, high quality, and consistent customer engagement across the MTA
 5. Establish uniform operating standards and design and optimize MTA-wide transit network across entire system and region, rather than agency-by-agency
 6. Centralization of all operating support functions, focusing Agencies on service delivery
- **Who:** The MTA and the Board will need to recruit a number of leaders in key functional areas to help execute this transformation, including a Managing Director/Chief Operating Officer, a Chief Engineering Officer, and a Chief Transformation Officer
- **When:** The majority of the transformation effort should be front-end loaded in the initial 6-9 months with some aspects completed over an additional 18-24 months

The MTA's transformation seeks to change the fundamental ways in which the Agencies do business in order to drive improved service levels for the customer, process efficiencies and cost reductions

The MTA is inefficient and complex, which creates an urgent need for a transformation of business processes that could be used as a platform to improve service

Observed Structure and Processes

- Partial consolidations have created additional layers of complexity in functions like Procurement
- Enterprise Resource System is used by all Agencies, but implementation, uses and processes vary widely
- Common functions like HR and Procurement are split between the MTA and Agencies, creating duplication and redundancy
- Policies limit the autonomy of Agencies often needed to maintain consistently high operational performance levels
- Most of the MTA's 74,000+ employees are working under collective bargaining agreements or Civil Service rules

Organizational and Process Complexity

- Effectiveness and efficiency may be reduced by:
 - Cumbersome processes due to legacy practices and lack of standardization across the different Agencies
 - Incomplete, incorrect or conflicting data and information drawn from disparate sources
 - Differing structures across the Agencies and too many organizational layers
 - Rigidity of civil service process limits ability to attract, retain, develop and manage talent in current job market
 - System-wide, the MTA is approximately engaged with 32 unions covering 82 locals or lodges across 70 contracts

The Impact

- Complexity and numerous management layers add delays to business processes across the enterprise
- Delays drive inefficiency and lead to unnecessary additional costs
- Ultimately the customer suffers from lower service levels

Source: MTA documents & interviews

Transformation is designed to deliver a renewed focus on service delivery for customers, improved business processes within the organization, and lower total cost

The Agencies Will Focus on Transport Service Execution

- Streamlined Agency structure will focus exclusively on operations and maintenance required to deliver service on a day-to-day basis
- Agency leadership is empowered to make decisions required to improve service levels and maintain state of good repair for their respective agency
- Agency connection with centralized support functions will be maintained through a business partner relationship structure

The MTA Will Focus on Improved Business Service Levels to Agencies

- Concentration of functional expertise in a shared services/center of excellence environment
- Simplification and standardization of processes, standards, specifications across Agencies
- Shift in certain business strategies to reflect more effective ways of operating (i.e. design-build)

Entire Organization Will Focus on Cost Reduction

- Elimination of redundancies, reduction of layers, and streamlining of processes
- Improved executional effectiveness through improved planning, coordination, and collaboration
- Recommendation could result in a potential reduction of roughly 1,900-2,700 positions
- Total potential annual savings opportunities are estimated between \$370-\$530M

The Transformation Plan relies on five foundational principles, intended to drive improved performance for the customer through business efficiencies

Centralize

- Consolidate back office and administrative functions into a shared services/center of excellence model
- Hire the experts that will provide high service levels to Agencies at lower total cost base
- Reduce redundancies and drive clearer lines of accountability

Simplify

- Reduce non-value added workload and processes that drive complexity and inefficiency
- Push certain activities to outsourced providers that can offer higher service levels at lower cost
- Eliminate or revise policies that only serve to drive additional complexity

Standardize

- Align processes across and within functions to build efficiencies
- Standardize specifications across similar operations and maintenance categories
- Build the required data and information that allows for one view of the truth across Agencies

Plan

- Build a robust operations planning process that drives interaction between Agencies and shared services
- Enable effective communication between the Agencies and their common functions counterparts
- Hold Agencies accountable to provide demand signals well in advance of predictable needs

Empower

- Provide managers with autonomy and accountability to deliver service
- Enable leadership with a delegation of authority required to support operations
- Create a culture of ownership and performance improvement that permeates through the MTA

The Transformation Plan puts a renewed focus on service delivery for customers through a series of significant changes to the underlying business functions

The MTA transformation relies on 6 significant changes to the business

- 1 Refocusing Agency responsibilities on safety, operations and maintenance; including merger of all Bus operations and consideration of separation of Subway and Bus
- 2 Centralization of Construction & Development function across Agencies and across the lifecycle of capital projects
- 3 Creation of new central Engineering function to set standards ensuring quality and sustainability of infrastructure
- 4 Creation of new central Customer Communication function to create clear, high quality, and consistent customer engagement across the MTA
- 5 Establishment of uniform operating standards as well as the design and optimization of MTA-wide transit network across the entire system and region, rather than agency-by-agency
- 6 Centralization of all operating support functions, focusing Agencies on service delivery

Safe, on-time, reliable, clean and cost efficient transportation services

Customer Focused Agencies

Subway

Bus

MNR

LIRR

Bridge-Tunnel

1

Agencies Have Singular Focus On:

Safety, Customer Service, Operations, Maintenance

Unified and Best-in Class Capabilities

2

Construction & Development

3

Engineering

4

Customer Focused Communications

5

Operating Standards & Service Design

6

Strategic and Efficient Support Functions

Legal

Human Resources

Budget & Accounting

Security

Information Technology

Diversity & EEO

Procurement

External Affairs

In the new organization, Agencies will focus exclusively on day-to-day operations and maintenance, rather than distractions related to general support functions

Illustrative, Not Comprehensive

Current Agency-Level Responsibilities
Safety
Operations
Maintenance
Budget & Accounting
Construction & development
Engineering
External Communications
Human Resources & Training
Legal
Procurement



Future Agency-Level Responsibilities
Safety
Operations
Maintenance ¹
<i>Budget & Accounting</i>
<i>Construction & development</i>
<i>Engineering</i>
<i>External Communications</i>
<i>Human Resources & Training</i>
<i>Legal</i>
<i>Procurement</i>

¹Agencies will retain construction and engineering resources required to conduct only routine maintenance activities

Customers will benefit from the singular focus of Agencies on safety, service delivery and asset maintenance

All support functions will be merged to drive higher service levels at lower costs

Consolidation of Support Functions

Common support functions and activities will be consolidated into the MTA organization and elevated to direct reporting line to the CEO

Illustrative, Not Comprehensive

Support Functions	FROM							TO
	HQ+ BSC	NYCT	MTA BUS	LIRR	MNR	TBTA	CC	MTA
Human Resources	●	●	●	●	●	●	●	●
Procurement	●	●	●	●	●	●	●	●
Legal	●	●	●	●	●	●	●	●
Budget & Accounting	●	●	●	●	●	●	●	●
Engineering	●	●	●	●	●	●	●	●
External Comms.	●	●	●	●	●	●	●	●

Benefits of Consolidation

- Service delivery focused on providing agreed upon higher service levels at lower costs due to
 - Elimination of redundancies and duplications
 - Increased scale supports specialization and increase in service levels
 - Rightsizing management structures allows for lower cost and could improve effectiveness
 - Standardization and simplification of processes across the MTA drives accountability and improves performance levels
 - Leveraging best practices and tools across the MTA network
- Will require change management to achieve a more agile culture
- Due to the future centralization of engineering, maintenance, operating standards, and common support functions at LIRR and MNR, the Transformation Plan does not include a recommendation to consolidate Railroad operations into one Agency

More than 40 functional groups within the existing MTA Agencies will be consolidated to 6 departments in the new MTA organization

The MTA may consider consolidation of all Bus operations and in the future, review elevating Bus to an independent operating Agency phased over the long-term

Background

- The MTA network includes three independent bus operations: NYCT Bus, MTA Bus, and MABSTOA
- As a combined entity, the Bus operations would be the second largest transit provider in the MTA network, both in terms of passengers and employees
- Collectively the Bus operations of the MTA are underperforming compared to peers, for example: MTA's bus maintenance costs per mile are higher than peers

Benefits of Consolidation & Further Review of Separation

- Provides increased management focus on efforts required to improve Bus performance
- Reduction in management layers and clearer reporting lines; both within Bus and between Agencies
- Encourages further specialization of skills on Bus and Subway respectively
- Synergies between Bus and Subway will be limited after support functions are centralized

Merger & Integration

- Integrating the existing Bus operations into one may take extra time and effort to orchestrate effectively:
 - Close coordination with Subway is required to manage significant near-term infrastructure developments
 - Internal consolidation of the Bus operations may be required prior to considering separation as a standalone entity

All Capital-related functions across the MTA will be merged into a new central group responsible for planning, development, and delivery of Capital Program

Current Approach of Capital Function

- Slow, bureaucratic, and costly
- Diffused responsibility for capital projects

New Approach of Capital Function

- Faster, reliable, and cost effective
- Central point of accountability

Deliver the capital projects focused on improving customer service and experience faster and at lower costs

Planning
Build the right projects

- Establish enterprise-wide vision and set priorities to meet regional needs
- Leverage enterprise asset management systems for asset conditions and needs
- Integrate investments with public and private sector strategies to maximize benefits from coordinated regional growth

Development
Build projects the best way

Project CEOs involved from concept through close out

- Identify optimal project delivery (groupings, timing, delivery) and increase competition in a historically concentrated supplier market
- Maximize use of design/build approach to improve innovation and speed delivery
- Bundle projects by critical attributes to drive lower administrative and construction costs, extract maximum value from private sector partners, and minimize impacts to customers
- Simplify specifications and reduce customization of designs to reduce costs

Delivery
Build efficiently and effectively

- Establish accountability at the project-level through Project CEOs involved from preliminary concept through project close-out
- Project CEOs empowered to make decisions that impact costs and timelines
- Standardize contracts and specifications to reduce risk to budgets and schedules
- Standardize systems and metrics to track performance, schedules and budgets

This element of the Transformation Plan builds on best practices observed in the MTA’s ongoing Cost Containment program

A new central Engineering group will establish clear engineering and maintenance standards to be executed consistently across the MTA Agencies

Current State: Engineering Decentralized At Agencies
Inconsistency and duplication of processes and standards

Key Engineering Functions	NYCT	MTABC	LIRR	MNR	TBTA
Rolling Stock Maintenance Standards	●	●	●	●	
Capital Maintenance Standards	●	●	●	●	●
Equipment Specifications	●	●	●	●	
"Make vs. Buy" Strategies	●	●	●	●	●
Engineering Data Management	●	●	●	●	●



- Unnecessary duplication of management across Agencies
- Inconsistent designs and maintenance policies and duplicate rules and measures – for same or similar equipment
- Complexity causes higher cost and lower buying power with vendors
- Differing data management systems to document performance

Future State: Central Engineering Group
Designed to provide consistent standards and specifications

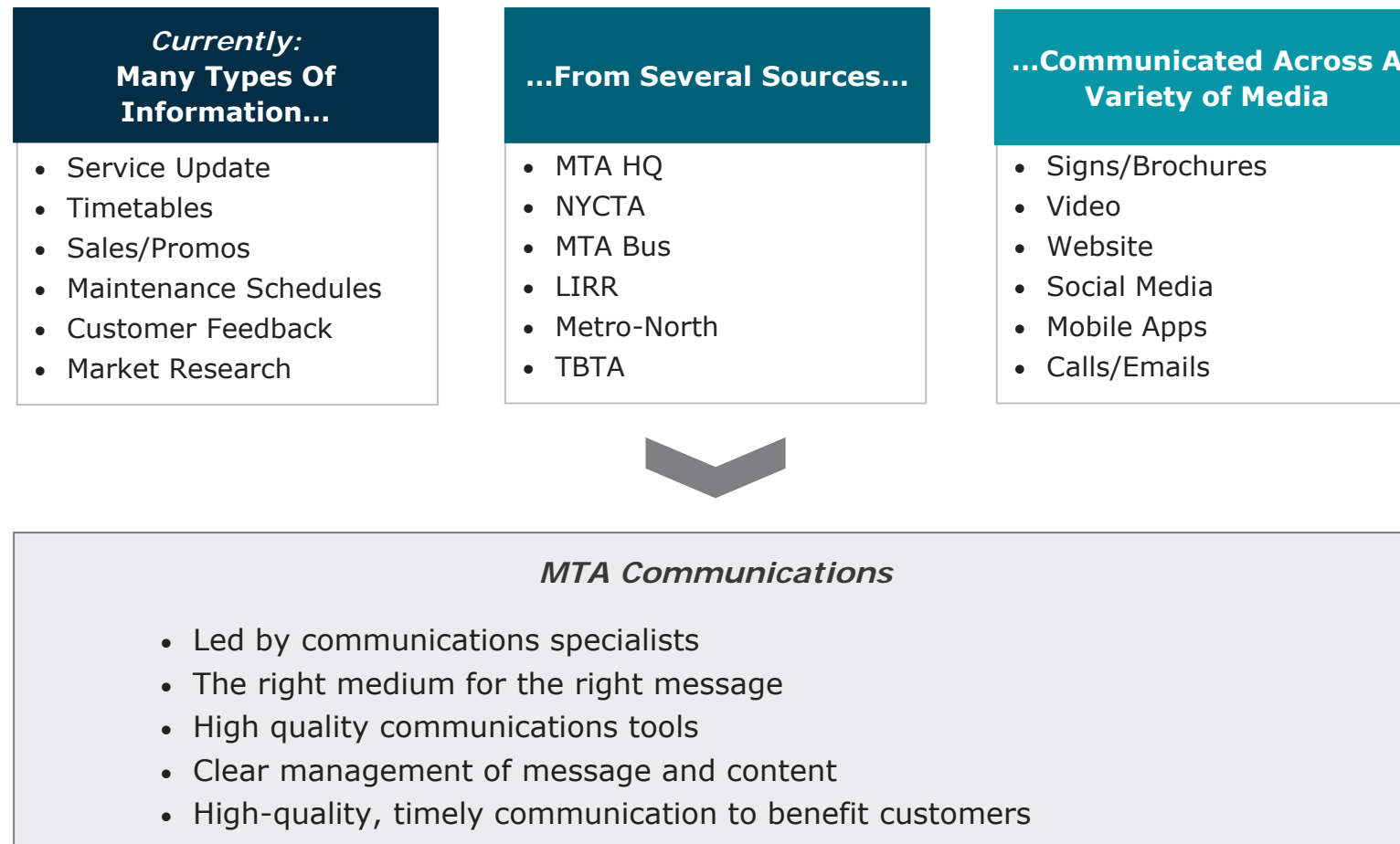
Central Engineering Role	Agency Role
<ul style="list-style-type: none">• Establish and manage uniform:<ul style="list-style-type: none">– Engineering policies– Procedures– Designs– Specifications– Inspection Processes	<ul style="list-style-type: none">• Day-to-day maintenance of rolling stock and infrastructure• Efficiency and quality in field operations• Routine inspections



- Consistent management and maintenance of each asset class
- Streamlined organization with clearer accountability
- Consistent technical specs, improving the MTA's buying power and lowering acquisition and maintenance costs
- Single engineering point of contact for regulators (FRA, FTA, etc.)

The MTA transformation will elevate Customer Communications to create clear, high quality, and consistent customer engagement

Customer Communications



The MTA transformation requires the centralization of Operating Standards and Service Design to eliminate silos and enable multimodal network design and optimization

Operating Standards and Service Design

Each MTA Agency has its own internal operations standards and service design capabilities, which would be better managed under one integrated function serving all Agencies

	Rules	Standards	Training	Service design	Tools
NYCT	●	●	●	●	●
MTABC	●	●	●	●	●
LIRR	●	●	●	●	●
MNR	●	●	●	●	●
TBTA	●	●	●		●
CC	●	●	●		●



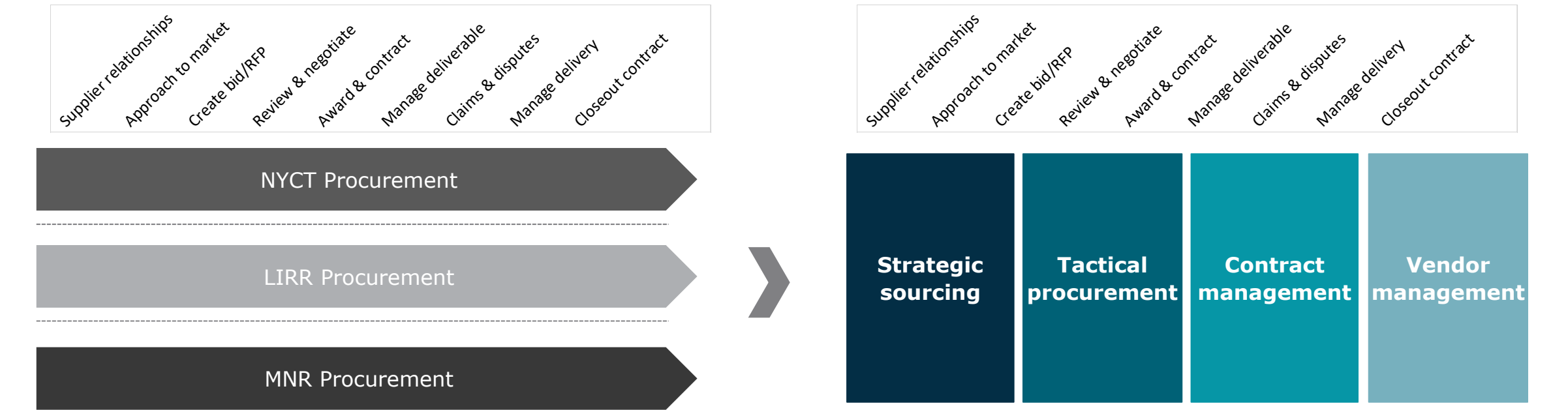
MTA Operating Standards and Service Design

- Team oversees rules and standards for all operating Agencies
- Consistent operating/maintenance/customer service standards
- Tools and processes to optimize the operation
- Writes the “playbooks”, Agencies execute to them

Procurement processes will be aligned across Agencies and categories to drive improved purchasing leverage, uniform contract and vendor management capabilities

Current State Example: Core Rolling Stock Parts

Future State Example: Core Rolling Stock Parts



Current State:

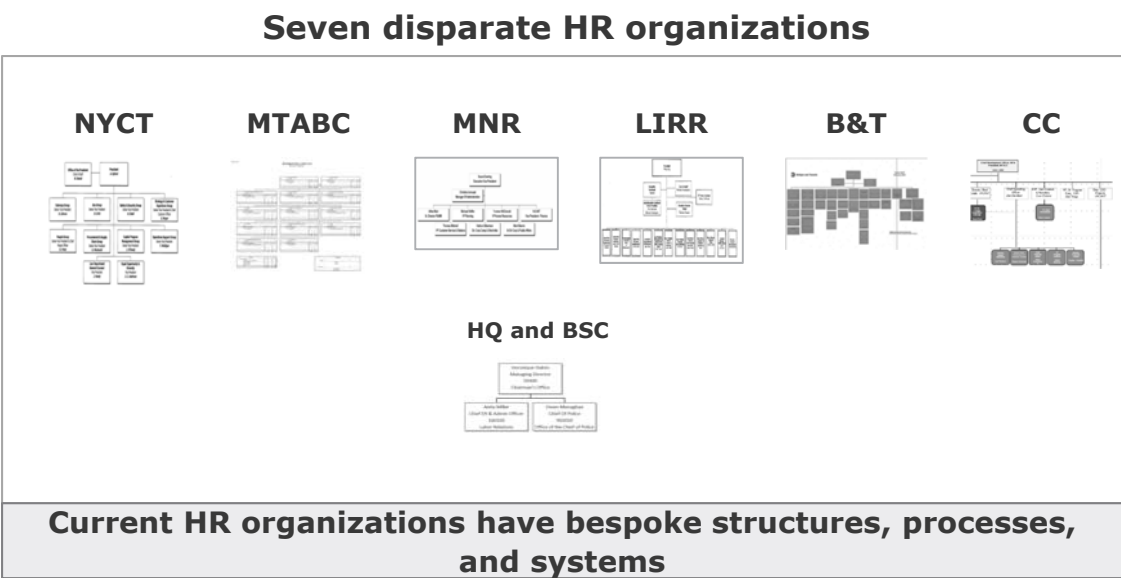
- Existing Procurement structures across Agencies are designed to support 'cradle to grave' approach/strategies
- Current siloed approach hinders the MTA from realizing its full potential benefits and creates duplication

Future State:

- Proposed category management approach across Agencies will allow specialists in specific categories to obtain the best value for the MTA from each purchase based on their expertise and experience
- Aggregation across Agencies will allow the MTA to realize scale benefits and eliminate duplication

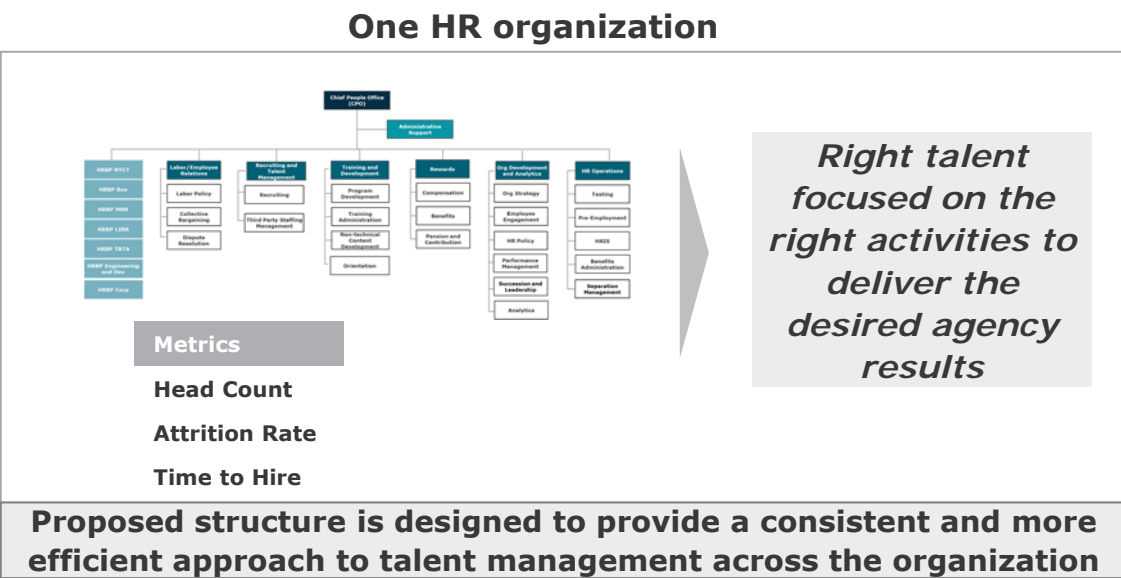
Human Resources will be focused on attracting, developing and retaining the talent required to improve the MTA’s business performance and service delivery

Current State



- Current State:**
- Inconsistent approaches to salary levels and compensation
 - No clearly articulated talent strategy
 - No agreed upon service levels with shared services
 - Duplication due to misalignment in system functionality and processes
 - Inefficiencies due to multiple hand-offs between Agencies and HQ/BSC
 - Limited analytics to support decision making
 - Lack of data consistency and integrity

Future State



- Future State:**
- Set consistent, Agency-wide approach to compensation
 - Commitment to retaining and developing talent
 - Service delivery to the Agencies based on service levels
 - Standardization and simplification of processes
 - Deliver full accountability by bringing all HR activity into one org.
 - Metrics to measure performance
 - Focus on data integrity and quality to support the organization

A Business Partner approach will be leveraged to maintain connectivity between centralized functions and Agency customers

Business Partner Role

- Provides the connection that keeps Agencies engaged with shared functions
- Partners with Agency and functional leadership to manage priorities and service levels
- Raises issues to Agency or functional leadership on emerging needs and challenges that must be addressed

Strategic Engagement

- Align business and functional goals to support the Agency/function objectives and operations:
 - Deep understanding of the function/Agency that can be translated to functional (HR/Finance/IT/Procurement) concepts and actions
 - Ability to influence – involved in key strategic and operational decisions
 - Manage service level agreements against set expectations, functional capabilities and Agency requirements

Rationale

- The role of the Business Partner is critical to drive the strategic and emerging needs of the agency in an effective and timely fashion by the central functional organization.
- Today, Agencies have their own support functions to meet their bespoke needs at significant costs
- With consolidated functions, Agencies will be provided standardized and efficient services at lower costs
- Successful implementation will depend on effective management of service levels and service delivery; historical performance of shared services will create a challenge the MTA needs to overcome

The MTA will require a Chief Transformation Officer to drive and implement the transition from current to future state, over a two year period

Chief Transformation Officer Role

- Responsible for leading the execution of on-going and new initiatives to drive improved safety, customer service and operational efficiency across the \$18B MTA organization
- Initiatives will include substantial reorganization, development of strong center-led business functions, streamlining business processes, establishment of controls and other efforts to drive improvement
- Comprehensive and detailed opportunity assessment and implementation planning required to activate this Transformation Plan and achieve the desired benefits

Key Responsibilities

- Lead a team focused exclusively on delivering the transformation
- Launch a Quality Assurance workstream focused on building and embedding cross-functional capabilities that helps ensure the MTA achieves intended results from vendors and suppliers across categories
- Execute current and new initiatives related to driving effective integration of the Agencies and functions
- Drive a continuous improvement culture that supports future initiatives on a consistent basis
- Generate multi-year value creation strategies and a structure to support them

Reporting Relationship

- Reports to the MTA Board as mandated by New York State legislation
- Works closely with other MTA senior leadership team members to drive achievement of goals

The transformation requires a Managing Director/Chief Operating Officer within the centralized organization to enable consolidation and standardization across Agencies

Managing Director
/Chief Operating Officer
Role

- Lead a team of operating Agency leaders of subway, commuter rail, bus, and bridge/tunnel transportation systems to deliver safe, reliable, and cost-effective transportation services
- Shape a centralized Operations capability that takes a regional, multimodal view of service design and delivery within the MTA
- Create a culture of accountability that permeates through all levels of the MTA and across Agencies

Key Responsibilities

- Lead a team of senior operating executives to deliver safe, high quality transportation services
- Establish clear operating goals and metrics across every operating unit and hold executives accountable for delivery of those goals
- Focus alignment across Agencies to maximize customer service and experience
- Drive operating capabilities and manage control of Agency costs

Reporting Relationship

- Reports directly to the Chairman & CEO, and potentially the Board if that organizational configuration is preferred
- Works closely with other MTA senior leadership team members to drive achievement of goals

The MTA should ensure diversity remains a central priority across the agency, and ensure that the agency continues to lead in diversity goals

Chief Diversity Officer

- The Chief Diversity Officer should continue reporting directly to the Chairman & CEO
- Helps to ensure workforce diversity and inclusion initiatives are maintained and expanded, in partnership with HR
- Responsible for standardized, centralized MTA-wide EEO analysis, and other mandated federal reporting requirements
- Responsible for ensuring the MTA continues to lead the region and nation in MWBE programs

Benefits

- Maintain diversity as a continued MTA priority and presents opportunities to scale up efforts
- Help to ensure the region can continue to access and benefit from economic development opportunities, via MTA MWBE Programs
- Actively creates and expands opportunities for new talent while developing a more inclusive environment for existing employees

Implementation

- Help ensure parallel centralizations of Procurement and Capital-related functions include an enhanced focus on MWBE and small business development objectives
- Maintain clear reporting of results to encourage transparency across agencies in achieving these objectives
- Prioritize workforce diversity and inclusion efforts for employees and creates a prioritized plan to extend the reach of these initiatives

The MTA should add a leadership role and resources dedicated to prioritize and strengthen accessibility of the network

MTA Accessibility Officer

- The MTA Accessibility Officer will report directly to the CEO to raise the strategic profile of these initiatives
- Responsible for ensuring that accessibility is considered and advanced across the MTA network
- Actively engage the community in critical decisions, progress reporting and feedback

Benefits

- Help ensure the network is accessible to all as a conduit to employment, opportunity, culture, and community
- Extend on-going programs to all Agencies, creating a more user-friendly regional network
- Increase ridership across the MTA network and reduce reliance on alternative means of transit

Implementation

- Create a prioritized plan to address accessibility deficiencies across the network
- Increase coverage of accessible stations, including introduction of elevators and other accessibility features
- Expand training specifically to station agents, paratransit and bus operators, and others
- Improve communication and introduce new tools designed to help customers access the network

Steps towards implementation planning and in support of the next phase can be taken immediately

- Define and formalize specific project milestones and goals by function, agency, and key leadership role across the MTA
- Establishment of Construction & Development function to support shift to alternative delivery methods including design-build
- Realignment of Procurement resources across Agencies into category management strategy
- Consolidation of Legal functions across Agencies
- Reduction of target office space leases with near term expiration dates
- Rationalization of specific technology investments

Disclaimer – Important Information Regarding This Transformation Plan

This Transformation Plan (“Transformation Plan”) was prepared by the Metropolitan Transportation Authority (New York) (the “MTA”) and AlixPartners, LLP (“AlixPartners”) pursuant to Section 1279-e of the Public Authorities Law exclusively for the sole benefit use of the Board of the MTA (the “Board”).

THIS TRANSFORMATION PLAN IS NOT INTENDED TO BE RELIED UPON BY ANYONE OTHER THAN THE MTA, OR INDUCE ANY ACTION OR FORBEARANCE BY ANYONE OTHER THAN THE MTA. Accordingly, no liability or responsibility is accepted by AlixPartners or its employees, affiliates, or partners for any loss whatsoever arising from or in connection with any third party use of this Transformation Plan, including any person or entity other than the MTA.

The Transformation Plan reflects conditions and the views of the MTA and AlixPartners as of this date, all of which are subject to change. AlixPartners undertakes no obligation to update or provide any revisions to this Transformation Plan to reflect events, circumstances, or changes that occur after the date hereof.

This Transformation Plan is incomplete without reference to, and should be viewed solely in conjunction with, any oral briefing provided by the MTA or AlixPartners and their agents which forms part of the Transformation Plan.

In preparing this Transformation Plan, the MTA and AlixPartners have relied upon and assumed, without independent verification, the accuracy and completeness of all information available from public sources, from the Agencies, from the MTA, or which was otherwise provided to us. AlixPartners further relied on the assurance of management and staff of the MTA that they were unaware of any facts that would make the information provided incomplete or misleading. AlixPartners is not responsible for any misrepresentations made to AlixPartners during this review. AlixPartners has not subjected the financial information provided to it and contained herein to an examination in accordance with generally accepted auditing or attestation standards. Accordingly, AlixPartners cannot and does not express an opinion on the financial information and does not assume any responsibility for the accuracy or correctness of the projected financial or other data, information and assessments upon which the enclosed document is presented.

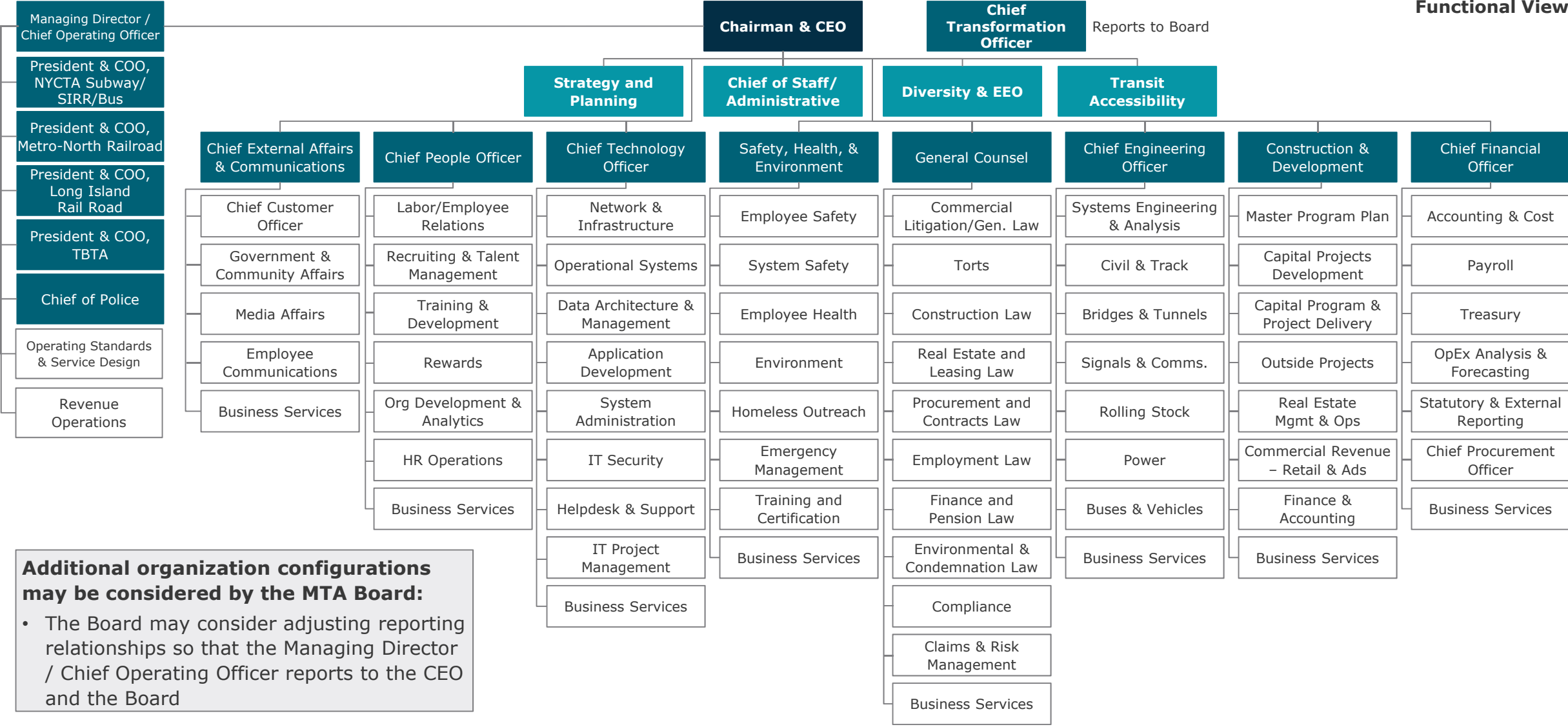
This Transformation Plan may be based, in whole or in part, on projections or forecasts of future events. A forecast, by its nature, is speculative and includes estimates and assumptions which may prove to be wrong. Actual results may, and frequently do, differ from those projected or forecast. Those differences may be material. Items which could impact actual results include, but are not limited to, unforeseen micro or macro economic developments, business or industry events, personnel changes, casualty losses, or the inability of the MTA to implement plans or programs.



Section 1 Appendix: Organization Charts

In the new organization, the MTA CEO has 13 direct reports, representing all major functions, and a support staff

Functional View





Section 1 Appendix: Key Constraints

Full implementation of the Transformation Plan will require the MTA to overcome or manage a number of structural challenges

Constraint	Description
Pension Portability	<ul style="list-style-type: none">• Pension programs historically offered by the MTA Agencies have been a significant benefit to employees and an important tool in attracting and retaining the required workforce• Movement of employees across Agencies (called “yogis”) have resulted in co-mingling of employees from different agencies with different pension programs linked to different work rules
Legacy Agreements	<ul style="list-style-type: none">• Over the course of time the MTA and other government agencies have created a series of agreements that allow the agencies to conduct business – jointly or separately – in the same places• Several proposals contained in this Transformation Plan will require the MTA to engage with other agencies operating in the region in order to update or change terms• Metro-North operates within the State of Connecticut pursuant to a service agreement with the Connecticut Department of Transportation
Civil Service	<ul style="list-style-type: none">• Portions of the MTA’s agency network (NYCT and TBTA) are participants in the New York City Civil Service System; within those agencies the vast majority of employees have Civil Service status:• The City-wide Civil Service system requires participating agencies to follow a specific staffing system that is often inflexible and complex in nature• Many of the initiatives included in this Transformation Plan would require the MTA to work through Civil Service constraints to align the correct resources against the capabilities and roles required for success in the future
Collective Bargaining Agreements & Work Rules	<ul style="list-style-type: none">• System-wide, the MTA is engaged with approximately 32 unions covering 82 locals or lodges across 70 contracts• Representation is most prevalent in frontline operations and maintenance functions, however other functions included in the consolidation proposal are also represented• The MTA will need to negotiate changes required to support the Transformation Plan
Pay Scale Limitations	<ul style="list-style-type: none">• Compensation ceiling in place has cascading effect on the compensation of other positions• Internal compensation policy limits increases to about 20%• Rewards for performance are limited by salary bands• The MTA’s pay scale is often uncompetitive compared to the private industry

Civil Service reform may be needed to support the implementation of the Transformation Plan

Civil Service	
Current Scope	<ul style="list-style-type: none">• New York City Transit (approximately 83% of employees)• The Triborough Bridge & Tunnel Authority (approximately 98% of employees)
Summary of Issue	<ul style="list-style-type: none">• The City-wide Civil Service system requires participating agencies to follow a specific staffing system that is often inflexible and complex in nature• Application processes revolves around testing that is offered at certain times of the year, and requires a level of planning and awareness to participate• The NYCT and TBTA are part of a larger, City-wide Civil Service system where workforce and opportunities are shared and managed against a seniority ranking by position title
Challenges Posed to the MTA	<ul style="list-style-type: none">• The MTA has experienced challenges in attracting, retaining and developing talent in the existing Civil Service system, including:<ul style="list-style-type: none">– Hiring process is lengthened by testing requirements and cycles, which causes challenges in recruiting talent in a competitive job market– Limited flexibility in choosing the right resource to do any specific job both internal and new hires; reduces opportunity to make changes ranging from cross-training to reorganization– Rewards for good performance can be limited by salary bands, sometimes leading to promotions to ensure retention– Seniority-based system creates additional complexity when right-sizing the organization – junior employees are pushed out first and into a City-wide Civil Service talent pool which often has subsequent effects at other agencies

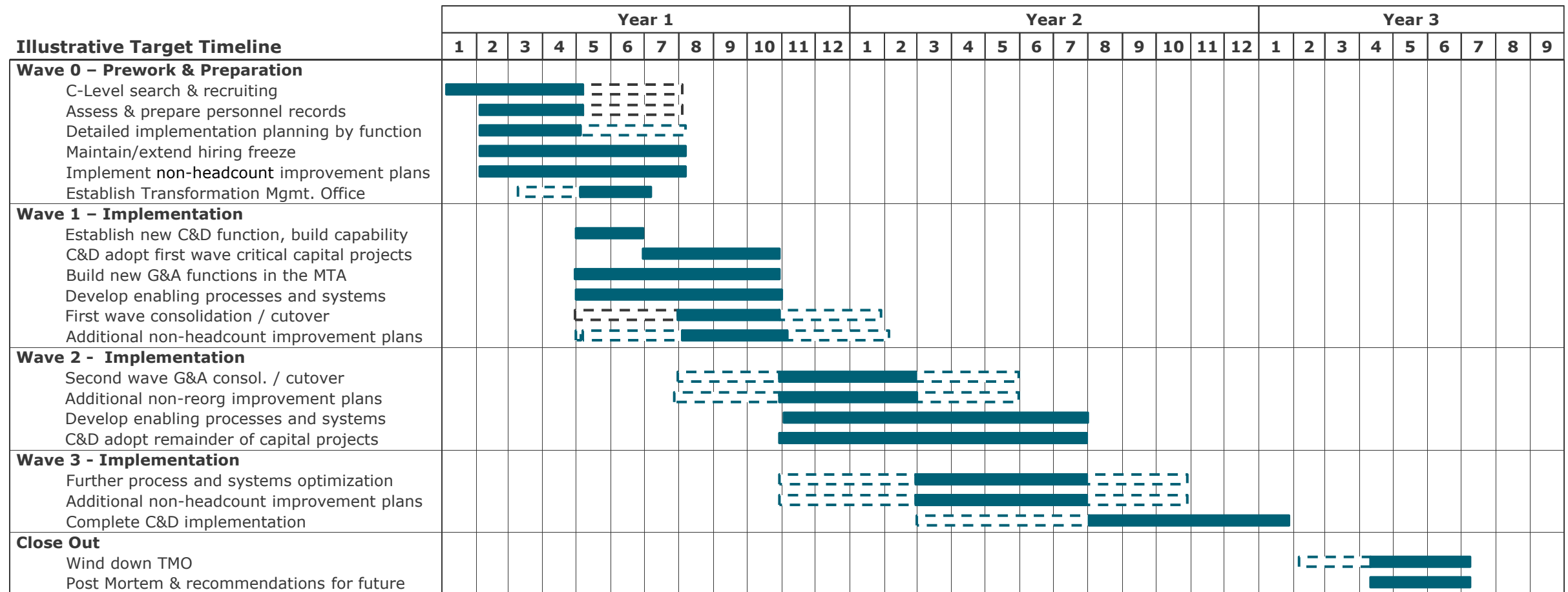
The proposed Transformation Plan relies on a selection of optimization approaches that are recognized as best practice in large-scale transformations

Approach	Description
Lift and shift to one MTA	Group existing, similar functions from Agencies into one centralized group
Matrix reporting structure	Change reporting structures to align like functions centrally but maintain connection to the Agencies
Center of excellence within the MTA	Create new centralized function that replaces agency-based activities with collection of experts working within improved structure, process, governance, etc.
Outsource to 3rd party	Engage a 3rd party to manage certain functional activities in part or in whole
Reduce or end work type	Change policies, processes, procedures, etc. in order to reduce/eliminate certain types of work
Change working conditions	Material adjustments to the context in which work is conducted including the supporting resources or infrastructure



Section 1 Appendix: Timeline

The Transformation can take approximately two years to complete, provided the structural constraints, risk factors and success factors are properly addressed



The MTA will benefit from planning and preparation in advance of the start of implementation



Section 1 Appendix: Next Steps & Post-Implementation

Following are some of the team's recommended immediate next steps

- Socialize and explain the design as currently proposed
- Meet with stakeholders and collect additional input
- Clarify specifics of the proposed design as needed
- Refine details of the design
- Incorporate findings from Waste, Fraud, and Abuse, Cash Flow Analysis and Capital Program Review work streams
- Define timelines, goals and performance metrics

Once the Transformation Plan has been implemented, the MTA's improvement opportunities will have just begun

- The Transformation Plan is a critical part of the stabilization and sets the stage for incremental improvements
- Streamlining the organization will yield numerous benefits – financially and operationally – but will also enable further opportunities
- Given the magnitude of this transformation, it would be reasonable to allow the organization to 'catch its breath' before undertaking significant follow-up undertakings
- Instilling an MTA culture of proactivity is the foundation of further improvements
- The institutionalization of a central Transformation Management Office (TMO) facilitates a means to: identify, prioritize, charter, resource, communicate, and track the highest impact projects going forward
- The list of prospective post-transformation projects is voluminous and goes well beyond the scope of this document



Section 1 Appendix: Methodology

The proposed approach utilizes a balance of operational, organizational, and financial metrics to identify potential improvement opportunities

Method	Approach	Applications	Resources & Tools
Organization Structure Analysis	<ul style="list-style-type: none"> Collected ~74K employee records at badge level, with available reporting relationships Created reporting relationships based on org charts, discussion and validation with Agencies for non-frontline employees ~11K Mapped employees into functional families to identify duplication and other opportunities 	<ul style="list-style-type: none"> Spans and layers analysis Duplication/redundancy identification 	<ul style="list-style-type: none"> MTA employee census AlixPartners Radial Organization Analyzer AlixPartners reference metrics
Financial/ Functional Efficiency	<ul style="list-style-type: none"> Collected MTA financial and operational records – summary and transaction Like-for-like performance comparisons across key functions and spend areas used to identify opportunity; against internal and external peers 	<ul style="list-style-type: none"> Organization sizing Opportunity identification Expense reduction opportunities 	<ul style="list-style-type: none"> Peer data published by FTA and other resources AlixPartners reference metrics 3rd party benchmarks & KPIs
Insource / Outsource Analysis	<ul style="list-style-type: none"> Identified non-core work and functions that could be executed reliably by a 3rd party Compared current and future total costs to define specific opportunities 	<ul style="list-style-type: none"> Complexity reduction Workload and related headcount reduction Cost arbitrage opportunities 	<ul style="list-style-type: none"> MTA financial and operational records AlixPartners reference metrics
Activity-based modelling	<ul style="list-style-type: none"> Defined the resourcing needs of specific activities or projects at an FTE/role level or similar granularity Defined sensitivities that drive variation in results; study the likely outcome and impact on performance 	<ul style="list-style-type: none"> Organization sizing Asset rationalization Complexity reduction 	<ul style="list-style-type: none"> MTA historical performance records Performance parameters
Internal best practice	<ul style="list-style-type: none"> Evaluated maturity level of business model across Agencies Selected internal best practice and justify to a broader application 	<ul style="list-style-type: none"> Staffing structure validation Staffing consolidation / scale up 	<ul style="list-style-type: none"> Proven design build based staffing at smaller agencies
Qualitative Analysis	<ul style="list-style-type: none"> Interviewed more than 100 MTA employees representing all Agencies and functions; ranging levels of responsibility from CEO to manager Collected views on critical needs and requirements for the MTA transformation 	<ul style="list-style-type: none"> Opportunity & challenge identification Perspective on likely outcomes 	<ul style="list-style-type: none"> MTA employees and stakeholders

Several risk factors need to be understood when reviewing the analysis put forth in this Transformation Plan

Risk Factor	Description
Data quality & integrity	<ul style="list-style-type: none">• Data provided by the MTA and the Agencies varied widely in accuracy and completeness• In certain instances critical data was not available and needed to be constructed or recreated, such as reporting relationships for majority of the MTA employee records
Benefits calculations	<ul style="list-style-type: none">• Financial projections included in this presentation are provided in ranges for discussion purposes• Estimated savings projected in this Transformation Plan are provided at annual run-rate bases, except where otherwise noted
Key assumptions	<ul style="list-style-type: none">• For the purposes of estimating benefits and costs to achieve them, several assumptions provided/validated by the MTA leadership team were relied upon• These include but are not limited to: severance calculations, burden rates, overhead cost per FTE, standard office space considerations
Timing	<ul style="list-style-type: none">• This assessment was performed from April to June 2019, using information and records that were available during this time• The specific details of opportunities highlighted in this report will change over time as baseline performance, organizational size and other parameters change



Section 2: 2015-2019 Capital Program Review

July 31, 2019

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Background and key terms

Background Facts

- Five proposals regarding the MTA 2015-2019 Capital Program (the “**Program**”) have been submitted to the MTA Board and the Capital Program Review Board (“**CPRB**”)
 1. September 2014 proposal had a total amount of \$32.0B (“**Original Submitted Plan**”)
 2. May 2016 proposal, which was approved by the CPRB on May 23, 2016, reduced the total amount by \$2.5B to \$29.5B (“**Original Approved Plan**”)
 3. February 2017 amendment increased the total amount by \$0.1B for NYCT and LIRR station investments (“**Amendment 1**”)
 - Due to the limited nature of the changes made in Amendment 1, this amendment is not included in the majority of the analyses herein
 4. July 2017 amendment increased the total amount by \$3.0B to \$32.5B (“**Amendment 2**”)
 5. May 2018 amendment increased the total cost to \$33.3B (“**Amendment 3**”)
- In addition, this presentation will also refer to the Q2 2019 “**Capital Dashboard**” extract, which was used to provide a more contemporaneous view of the 2015-2019 Capital Program
- In addition to the information in the materials submitted to the CPRB and the information contained in the Capital Dashboard, information from certain other internal systems was gathered and relied upon, including the Impact system and the Project Status Report (“**PSR System**”)

Key Terms

- “**Projects**” herein refers to the combination of the four components of a capital line item: Agency; Category; Element; Project (“**ACEP**”)
 - **Agency**: The MTA agency performing the work
 - **Category**: The broad classification (e.g., Track or Stations)
 - **Element**: A more specific classification (e.g., Tunnel Lighting or Grand Central Terminal)
 - **Project**: The most granular line item presented in the capital program submitted to the CPRB (e.g., Tunnel Lighting: 42 St Shuttle or GCT Elevator Improvements)
 - Projects may be discrete pieces of work (i.e., the purchase of buses) or components of larger pieces of work (i.e., a portion of the signal modernization work)
- “**Forecasted Commitments**” or “**Forecast**” herein refers to the commitments included in each iteration of the Program submitted to the MTA Board and the Capital Program Review Board
 - The MTA considers an actual commitment to be the encumbrance of funds, at the time of execution of a contract with a vendor, or the commitment to use MTA employees to complete a project, and the issuance of the associated Willingness to Accept Risk (“**WAR**”) certificate.
 - The commitment is reported in the year of the commitment, not the year of the delivery or the first instance of beneficial use.

Key takeaways from review of the 2015-2019 Capital Program¹

1	Future State	<ul style="list-style-type: none"> The MTA Transformation Plan should enable the MTA to efficiently do more capital projects The shift to design-build will require consistent funding to avoid penalties and consistent management to handle an increased number of existing projects
2	Delays in delivery	<ul style="list-style-type: none"> The 2015-2019 Capital Program has over \$10B remaining to be committed as of July 2019 The delivery of the Program has been impeded by the original approval delay and is at risk of further delays due to funding concerns; delays run the risk of inflationary cost increases
3	Funding challenges	<ul style="list-style-type: none"> With operating shortfalls forecasted to increase, the MTA has limited capacity to issue debt The contributions to the capital program from the operating funds have decreased
4	Changes to the Scope of the Program	<ul style="list-style-type: none"> The 2015-2019 Capital Program has undergone significant alterations due to the Subway Action Plan, the addition of LIRR Third Track, and the Enhanced Station Initiative Spending on other projects have been reduced, such as the Subway car purchase
5	Cost overruns	<ul style="list-style-type: none"> Changes in scope make a comparison to the Original Approved Plan difficult However, an analysis of the Program shows that approximately a third of completed projects have come in over budget
6	Duplication	<ul style="list-style-type: none"> Current decentralized approach to address capital needs in the same asset class potentially creates duplication in efforts from design to execution Consolidation of resources would lead to less spend on administration
7	Review of seven selected completed projects	<ul style="list-style-type: none"> This review revealed the type of changes in scope and planning that lead to cost overrun The framework used in this review should be considered for wider use; it could yield valuable metrics to understand the root causes of changes and cost overruns

[1] Per Section 1279-f of the New York Public Authorities Law, a forensic audit will be conducted by a separate firm and is scheduled to conclude in January 2020. The audit “shall include, but is not limited to a complete and thorough examination and detailed accounting of the authority’s capital elements...” Accordingly, a forensic audit is beyond the scope of this report.

In Future State Transformation Plan, all capital-related functions across the MTA should be merged into a central group resulting in more consistent execution and transparency

Current Approach of Capital Function

- Slow, bureaucratic, and costly process at the MTA and in the approval process
- Diffused responsibility for capital projects
- Highly optimistic schedules
- Many program rebalances resulting in constantly changing scope and budgets



Current Results

- Average 1½ years late in delivering both the 2010-2014 and 2015-2019 Capital Plans
- Extremely difficult to assess whether Capital Program funds are being spent efficiently and effectively

New Capital Planning Organization

Planning

Build the right projects

- Establish enterprise-wide vision and set priorities to meet regional needs
- Leverage enterprise asset management systems for asset conditions and needs

Development

Build projects the best way

- Identify optimal project delivery (groupings, timing, delivery) and increase competition in a historically concentrated supplier market
- Maximize use of design-build approach to improve innovation and speed delivery

Delivery

Build efficiently and effectively

- Establish accountability at the project-level through Project CEOs involved from preliminary concept through project close-out
- Standardize systems and metrics to track performance, schedules and budgets

New Approach of Capital Function

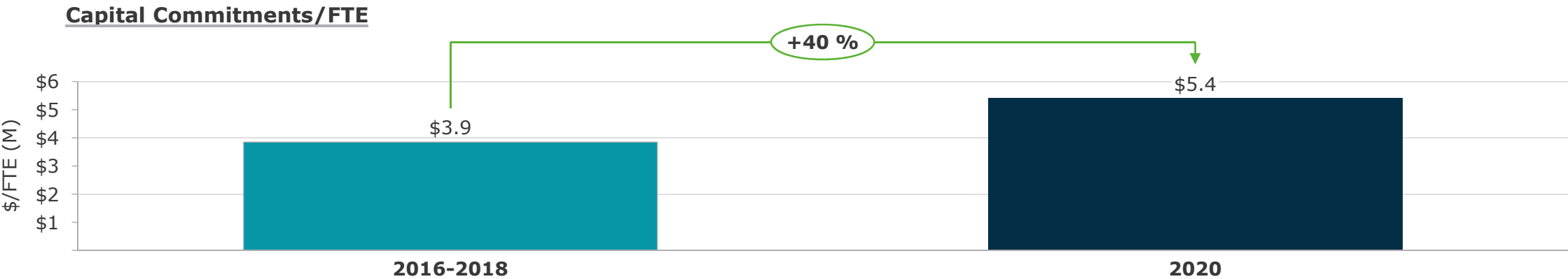
- Faster, reliable, and cost effective
- Central point of accountability
- Consistent, streamlined project planning and execution based on industry best practices



Expected Results

- Realistic, achievable Capital Plan
- Transparency on whether Capital Program funds are being spent efficiently and effectively
- Improved customer service and experience faster and at lower costs

In Future State Transformation Plan, a shift to design-build strategy should yield significant productivity improvements and increased capital commitments



Capital Program Details	2016-2018 Avg	2020	Delta
Capital Committed ¹ (\$M)	\$7,000	\$10,000	+\$3,000 (43%)
FTEs	1,817	1,843	+26 (1%)
Capital Committed/FTE	\$3.9M/FTE	\$5.4M/FTE	+2M/FTE (40%)

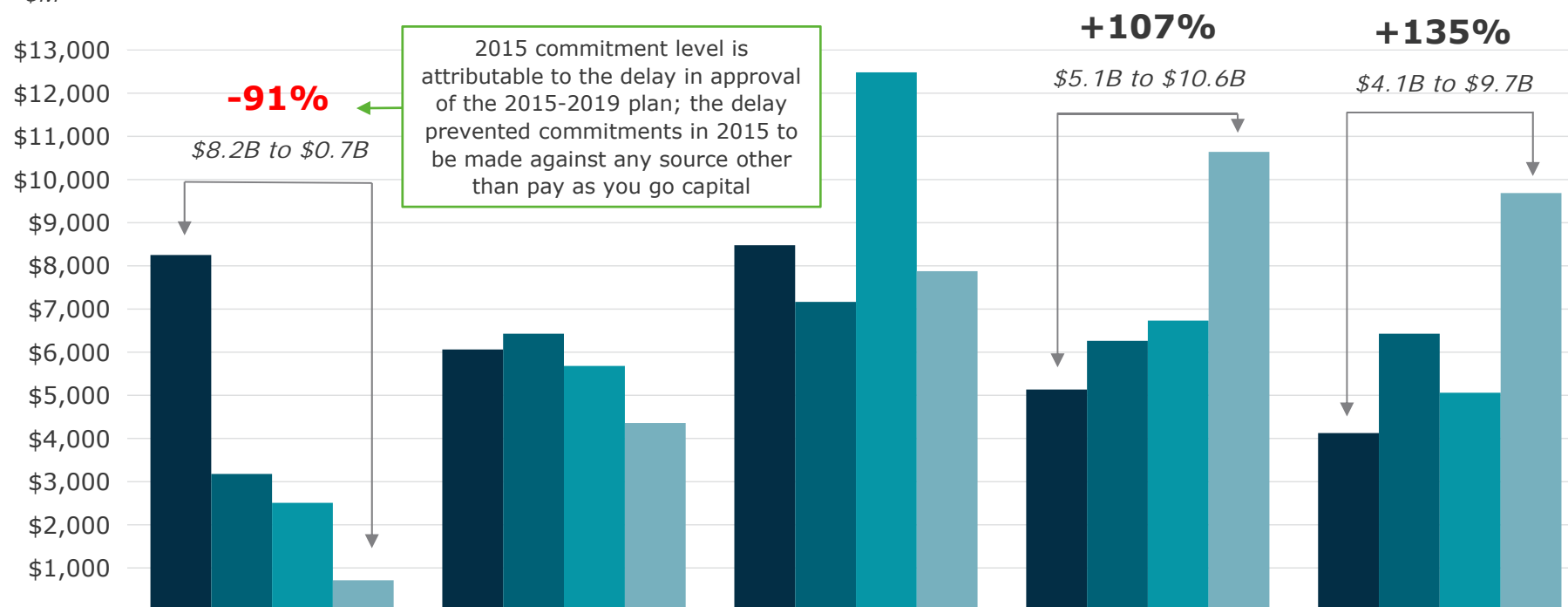
[1] Estimates of 2016-2018 commitments from Amendment 3 and information received from the MTA; 2020 forecasted commitment from draft capital plan
Source: MTA interviews and review of documents

Over \$10B has been shifted from 2015/16 to 2018/19 between the Original Submitted Plan and Amendment 3 resulting in 1-2 year delays in project delivery

- The Original Approved Plan from May 2016 included **\$12.7B** of Forecasted Commitments to be made in 2018 and 2019
- The latest amendment approved in May 2018 included over **\$20B** of Forecasted Commitments in 2018 and 2019
- This time shift costs the organization due to the loss of value related to inflation in the cost of goods and services
- The time shift also means the MTA delays its ability to realize the benefits of the capital improvements

Forecasted Commitments by Year

According to proposals submitted to the CPRB
\$M



Version	2015	2016	2017	2018	2019	Total
Original Submitted Plan (Sep 14)	\$8,251	\$6,060	\$8,476	\$5,133	\$4,126	\$32,046
Original Approved Plan (May 16)	\$3,178	\$6,425	\$7,164	\$6,262	\$6,427	\$29,456
Amendment 2 (Jul 17)	\$2,507	\$5,679	\$12,484	\$6,730	\$5,058	\$32,457
Amendment 3 (May 18)	\$713	\$4,358	\$7,874	\$10,639	\$9,686	\$33,270

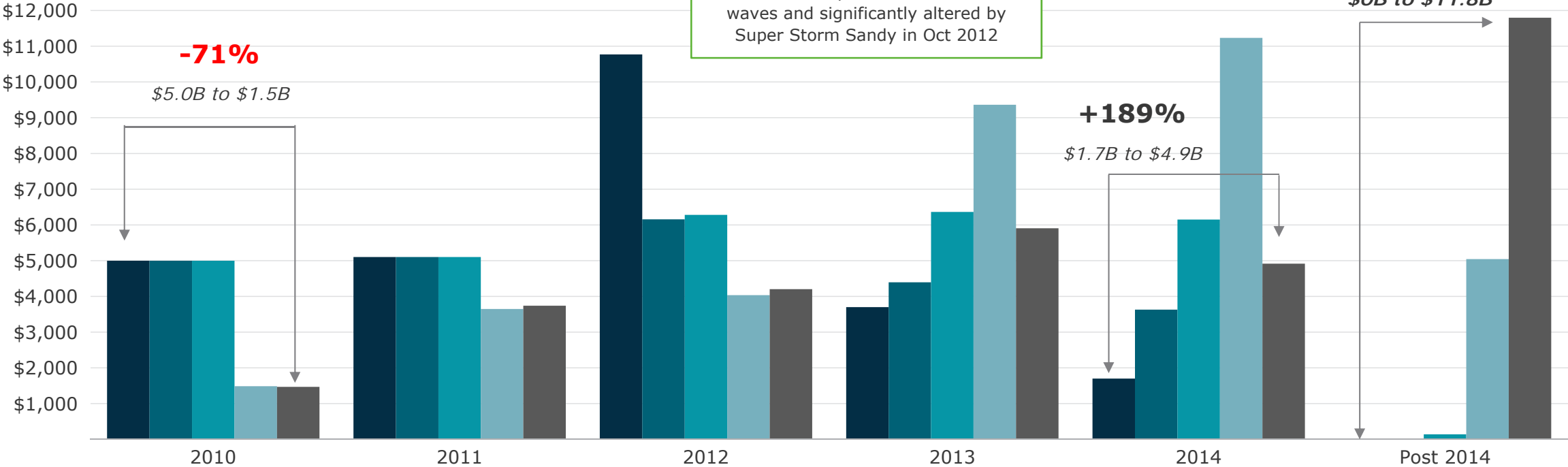
Source: MTA Capital Program submissions and amendments

Forecasted Commitment delays in 2010-2014 Capital Program resulted in \$11.8B of post 2014 Forecasted Commitments, potentially causing delays to 2015-2019 Program

Forecasted Commitments by Year

According to proposals submitted to the CPRB

\$M

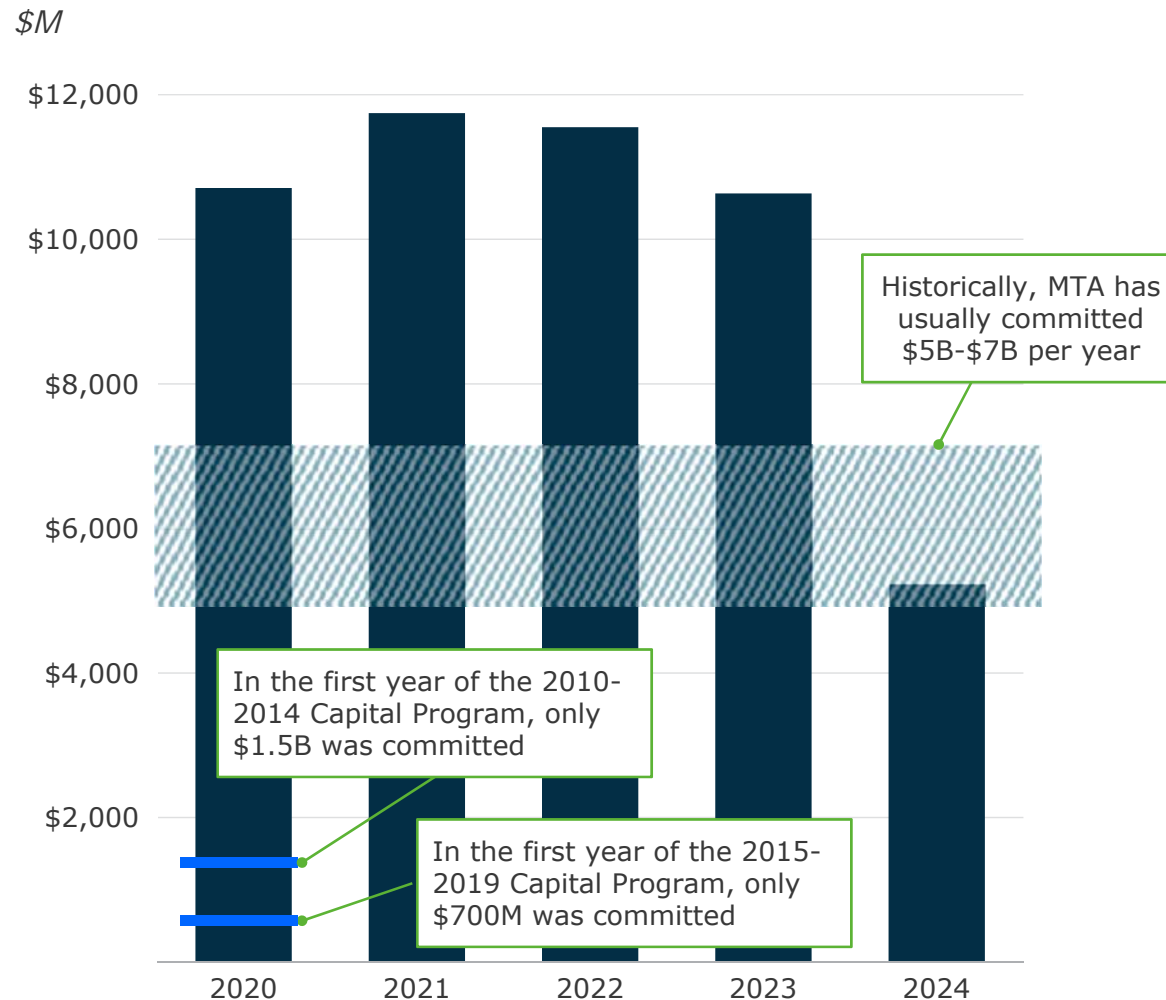


Version	2010	2011	2012	2013	2014	Post 2014	Total
Jun 2010: As Approved by the CPRB	\$4,998	\$5,099	\$10,768	\$3,700	\$1,700	\$0	\$26,265
Jan 2012: Amendment as Submitted to the CPRB	\$4,998	\$5,099	\$6,155	\$4,394	\$3,629	\$0	\$24,274
Dec 2012: Amendment for Hurricane Sandy Recovery	\$4,998	\$5,099	\$6,280	\$6,363	\$6,150	\$139	\$29,029
Jul 2013: Amendment as Submitted to the MTA Board	\$1,485	\$3,647	\$4,033	\$9,361	\$11,234	\$5,042	\$34,801
Jul 2017: Amendment as Approved by the CPRB	\$1,469	\$3,738	\$4,201	\$5,904	\$4,915	\$11,795	\$32,021

Source: MTA Capital Program submissions and amendments.

The draft 2020-2024 Capital Program has almost \$11B of Forecasted Commitments in the first year, which appears highly optimistic given historical performance

Draft 2020-2024 Capital Program Forecasted Commitments



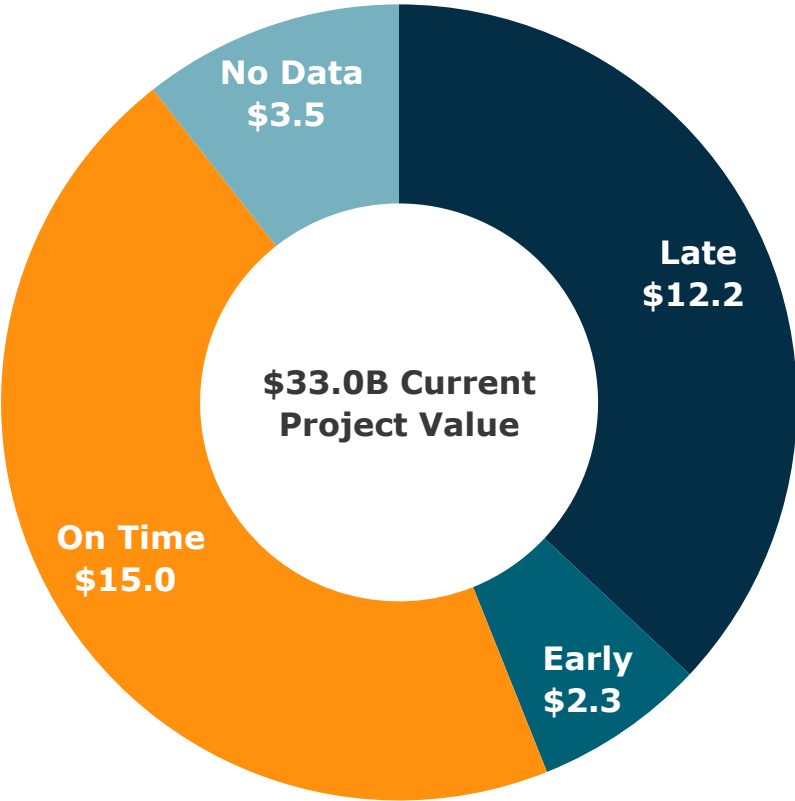
Source: MTA Capital Program submissions and amendments.

Discussion

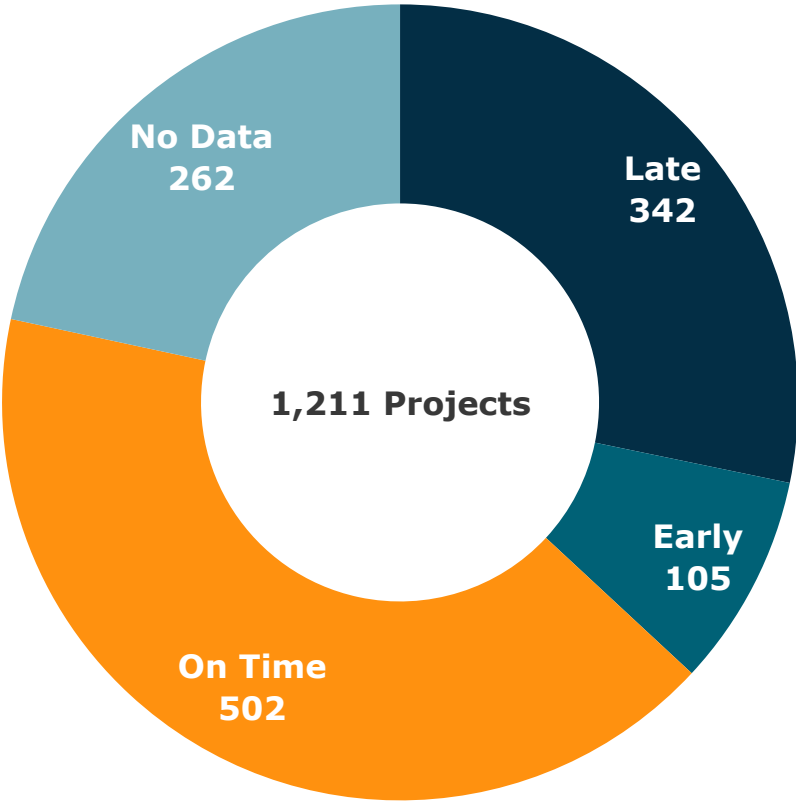
- Each of the last two capital plans had extenuating circumstances that resulted in a significant portion of the program to be committed outside the original window
 - The 2010-2014 plan was funded in two year increments and also redirected funds to deal with the reconstruction of the damage related to Super Storm Sandy
 - The 2015-2019 plan was approved ~18 months late in May 2016 and also redirected funds to handle new priorities including LIRR Third Track, the Enhanced Station Initiative ("ESI"), and the Second Ave Subway Extension
- Certain annual forecasted commitments in the recent capital plans appear to have been overly ambitious
 - Based on historical data, the MTA has usually committed between \$5B and \$7B per year on capital projects
- The overhang of prior programs means time and effort must be devoted to committing funds related to the prior programs while new programs have started
- The draft 2020-2024 program includes \$10.7B in Forecasted Commitment in 2020
 - Based on historical data it is highly unlikely that the MTA can reach this level of commitment in the first year
 - Proposed Transformation Plan improvements in program delivery using design-build approach should help in achieving better capital program commitment performance

Based on the latest Capital Dashboard 37% of projects by projected value started late

2015-2019 Capital Program evolution (\$B)



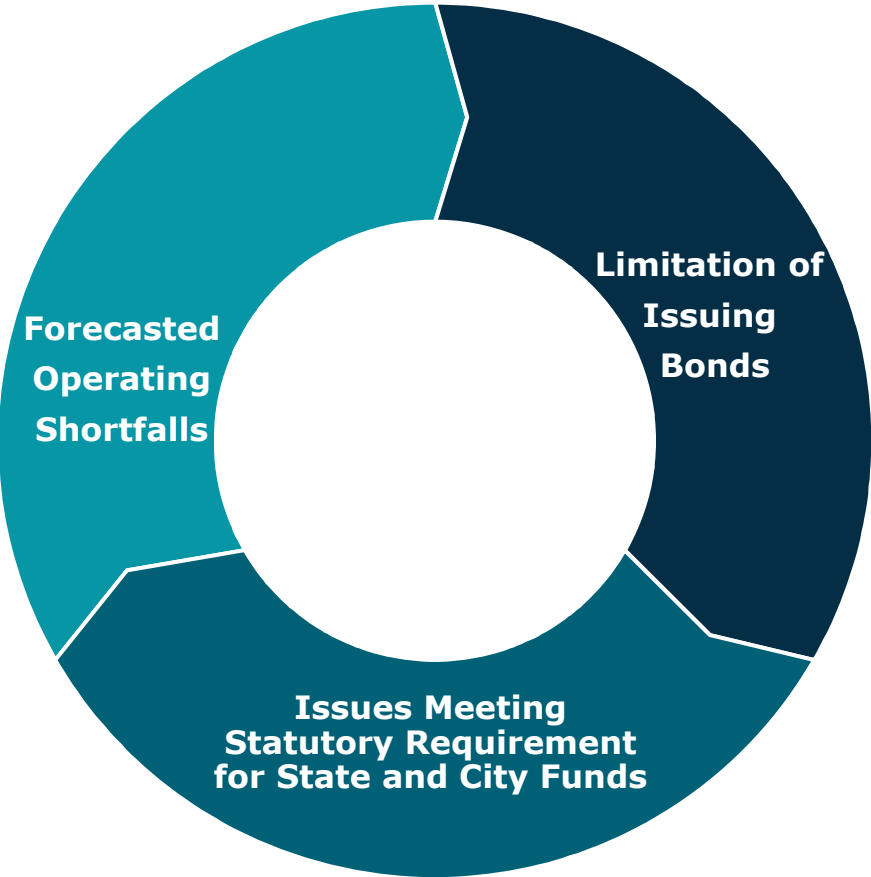
2015-2019 Capital Program evolution (# projects)



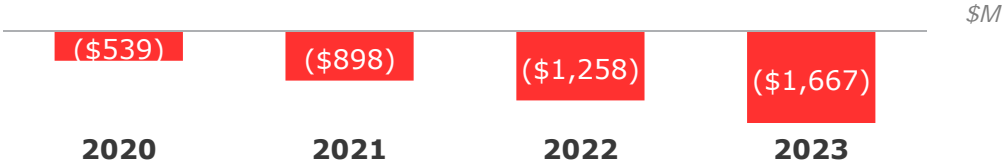
Delays in the 2015-2019 Program are due in part to the ~18 month approval delay
Source: Q2 2019 version of the 2015-2019 Capital Dashboard, based on original and current start dates

The MTA’s Capital Program is at risk of facing funding challenges stemming from the operating shortfall

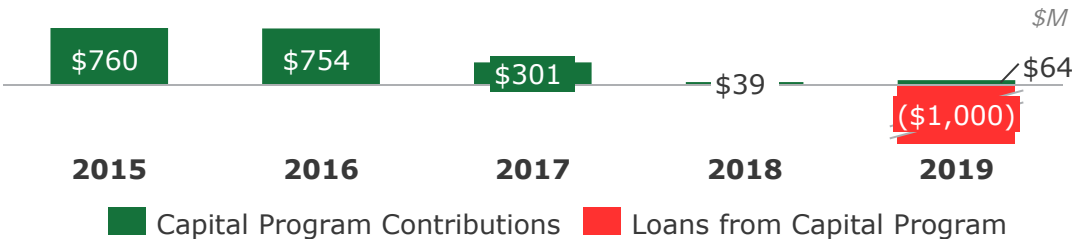
Forecasted operating shortfalls put capital funding at risk



- With operating shortfalls forecasted to increase, the MTA has limited capacity to issue debt
- The MTA is forecasting operating cash shortfalls in 2020-2023
 - Forecasted annual net deficit after subsidies and debt service adjustments

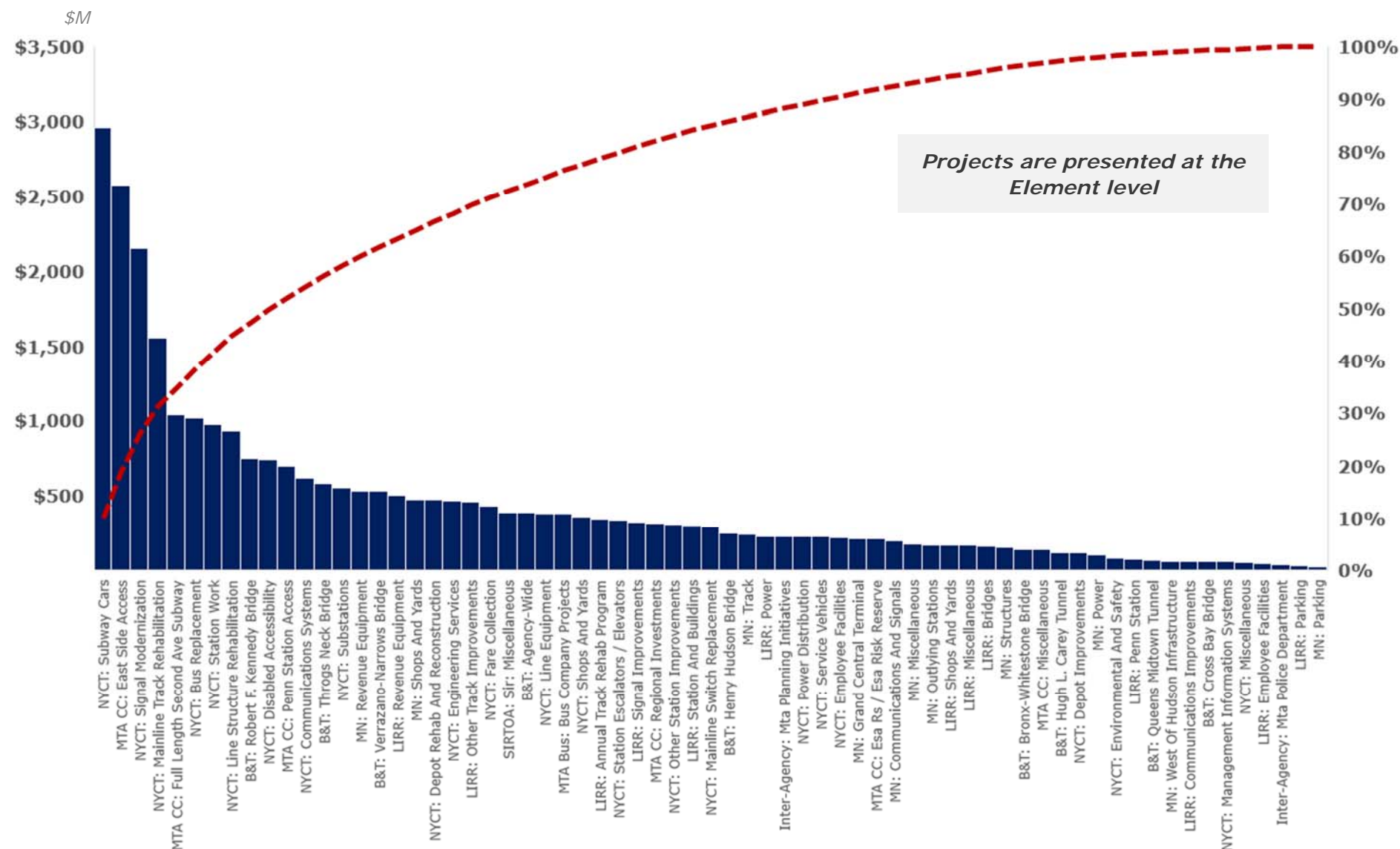


- The operating shortfall may reduce the MTA’s capacity to issue bonds and may lead to adverse ratings opinions
- The unused debt capacity is a factor to obtaining the remainder of the 2015-19 capital program commitments; currently approximately \$9B
- The MTA’s contributions to capital program from its operating funds have decreased over the last four years. Further, the MTA borrowed \$1B from the capital funding account in 2019; amount is to be repaid



Source: MTA interviews, credit reports, NY State Comptroller reports, historical results including July 2019 Financial Plan

Dollar Rank of Elements in 2015-2019 Original Approved Plan

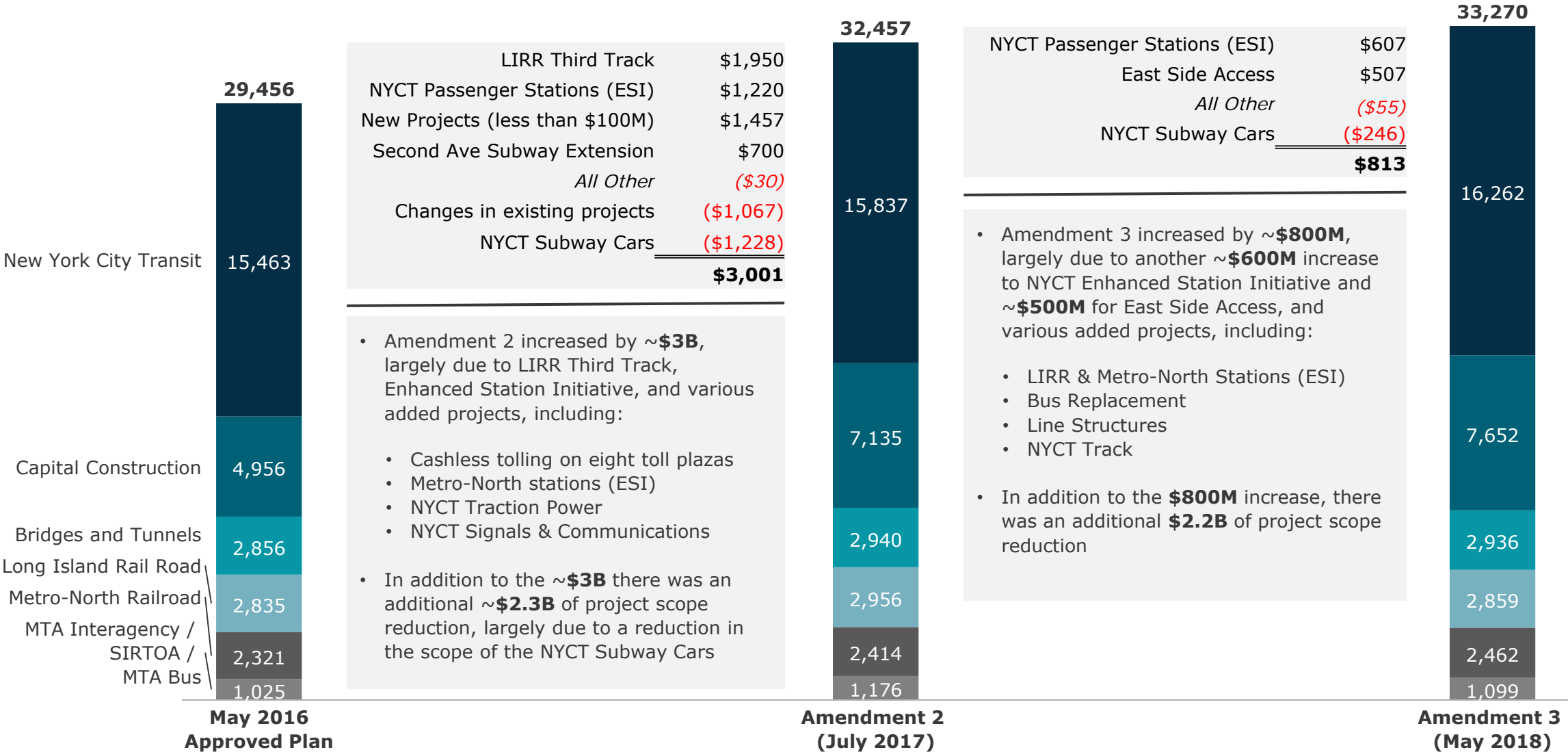


- Ninety-two (92) Elements were included in the original approved 2015-2019 Capital Program
- The top ten Elements account for 50% of the Original Approved Plan
- The top 32 Elements account for 80% of the Original Approved Plan
- Elements over \$1B:
 1. NYCT: Subway Cars
 2. MTA CC: East Side Access
 3. NYCT: Signal Modernization
 4. NYCT: Mainline Track Rehabilitation
 5. MTA CC: Full Length Second Ave Subway
 6. NYCT: Bus Replacement

Source: Original Approved Plan

Significant changes have been made in each CPRB approved iteration of the Program, with almost \$4B added to the Original Approved Plan

\$M



Source: Original Approved Plan; Amendment 2; Amendment 3

Changes between Original Approved Plan, Amendment 2, and Amendment 3

\$M	TOTAL MTA	NYCT	MTA CC	Bridges & Tunnel	LIRR	Metro-North	Inter-Agency and Other
Original Approved Plan - May 2016	\$29,456	\$15,463	\$4,956	\$2,856	\$2,835	\$2,321	\$1,025
→ LIRR Third Track	\$1,950	\$0	\$1,950	\$0	\$0	\$0	\$0
→ New Projects (less than \$100M)	\$1,457	\$642	\$0	\$359	\$194	\$189	\$73
→ NYCT Passenger Stations (ESI)	\$1,220	\$1,220	\$0	\$0	\$0	\$0	\$0
→ Second Ave Subway Extension	\$700	\$0	\$700	\$0	\$0	\$0	\$0
Penn Station (ESI)	\$170	\$0	\$0	\$0	\$170	\$0	\$0
NYCT Bus Replacement	\$168	\$168	\$0	\$0	\$0	\$0	\$0
LIRR Stations and Buildings (ESI)	\$125	\$0	\$0	\$0	\$125	\$0	\$0
NYCT Mainline Track Rehabilitation	\$2	\$2	\$0	\$0	\$0	\$0	\$0
NYCT Depot Rehab and Reconstruction	(\$41)	(\$41)	\$0	\$0	\$0	\$0	\$0
NYCT Line Structure Rehabilitation	(\$49)	(\$49)	\$0	\$0	\$0	\$0	\$0
Metro-North Rolling Stock	(\$92)	\$0	\$0	\$0	\$0	(\$92)	\$0
NYCT Signal Modernization	(\$119)	(\$119)	\$0	\$0	\$0	\$0	\$0
East Side Access	(\$195)	\$0	(\$195)	\$0	\$0	\$0	\$0
→ Changes in existing projects	(\$1,067)	(\$221)	(\$276)	(\$275)	(\$368)	(\$4)	\$78
→ NYCT Subway Cars	(\$1,228)	(\$1,228)	\$0	\$0	\$0	\$0	\$0
Amendment 2 - July 2017	\$32,457	\$15,837	\$7,135	\$2,940	\$2,956	\$2,414	\$1,176
→ New Projects (less than \$100M)	\$1,212	\$758	\$102	\$13	\$184	\$129	\$26
→ NYCT Passenger Stations (ESI)	\$607	\$607	\$0	\$0	\$0	\$0	\$0
→ East Side Access	\$507	\$0	\$507	\$0	\$0	\$0	\$0
NYCT Signal Modernization	\$297	\$297	\$0	\$0	\$0	\$0	\$0
MTA CC Regional Investments	\$153	\$0	\$153	\$0	\$0	\$0	\$0
Penn Station (ESI)	\$102	\$0	\$102	\$0	\$0	\$0	\$0
LIRR Third Track	\$100	\$0	\$100	\$0	\$0	\$0	\$0
NYCT Mainline Track Rehabilitation	\$20	\$20	\$0	\$0	\$0	\$0	\$0
LIRR Stations and Buildings (ESI)	(\$130)	\$0	\$0	\$0	(\$130)	\$0	\$0
NYCT Bus Replacement	(\$171)	(\$171)	\$0	\$0	\$0	\$0	\$0
NYCT Engineering Services	(\$175)	(\$175)	\$0	\$0	\$0	\$0	\$0
Metro-North Rolling Stock	(\$203)	\$0	\$0	\$0	\$0	(\$203)	\$0
NYCT Line Structure Rehabilitation	(\$206)	(\$206)	\$0	\$0	\$0	\$0	\$0
NYCT Depot Rehab and Reconstruction	(\$210)	(\$210)	\$0	\$0	\$0	\$0	\$0
→ NYCT Subway Cars	(\$246)	(\$246)	\$0	\$0	\$0	\$0	\$0
→ Changes in existing projects	(\$845)	(\$250)	(\$447)	(\$17)	(\$151)	\$122	(\$103)
Amendment 3 - May 2018	\$33,270	\$16,262	\$7,652	\$2,936	\$2,859	\$2,462	\$1,099

Source: Original Approved Plan; Amendment 2; Amendment 3

- After the Original Approved Plan the total cost increased by **\$3B**

→ Over **\$5B** of new scope was due to LIRR Third Track, NYCT ESI, Second Ave Subway Extension and various new projects

→ In addition to the **\$3B**, there was an additional **\$2.3B** of commitment freed up by change to the structure of the contract to buy the NYCT Subway Cars

- Between Amendments 2 and 3 the total cost increased **\$800M**

→ **\$600M** and **\$500M** was allocated to the NYCT ESI and East Side Access projects, respectively

→ As part of the total **\$2.2B** cumulative project cost reductions, the NYCT Subway Cars buy was further reduced by **~\$250M**

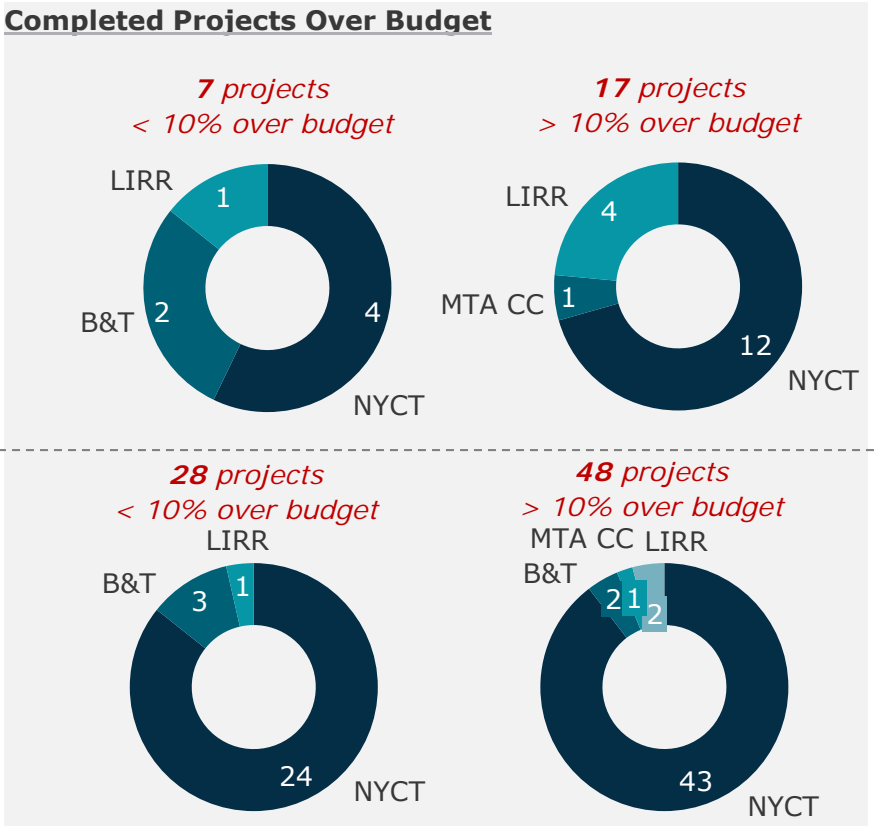
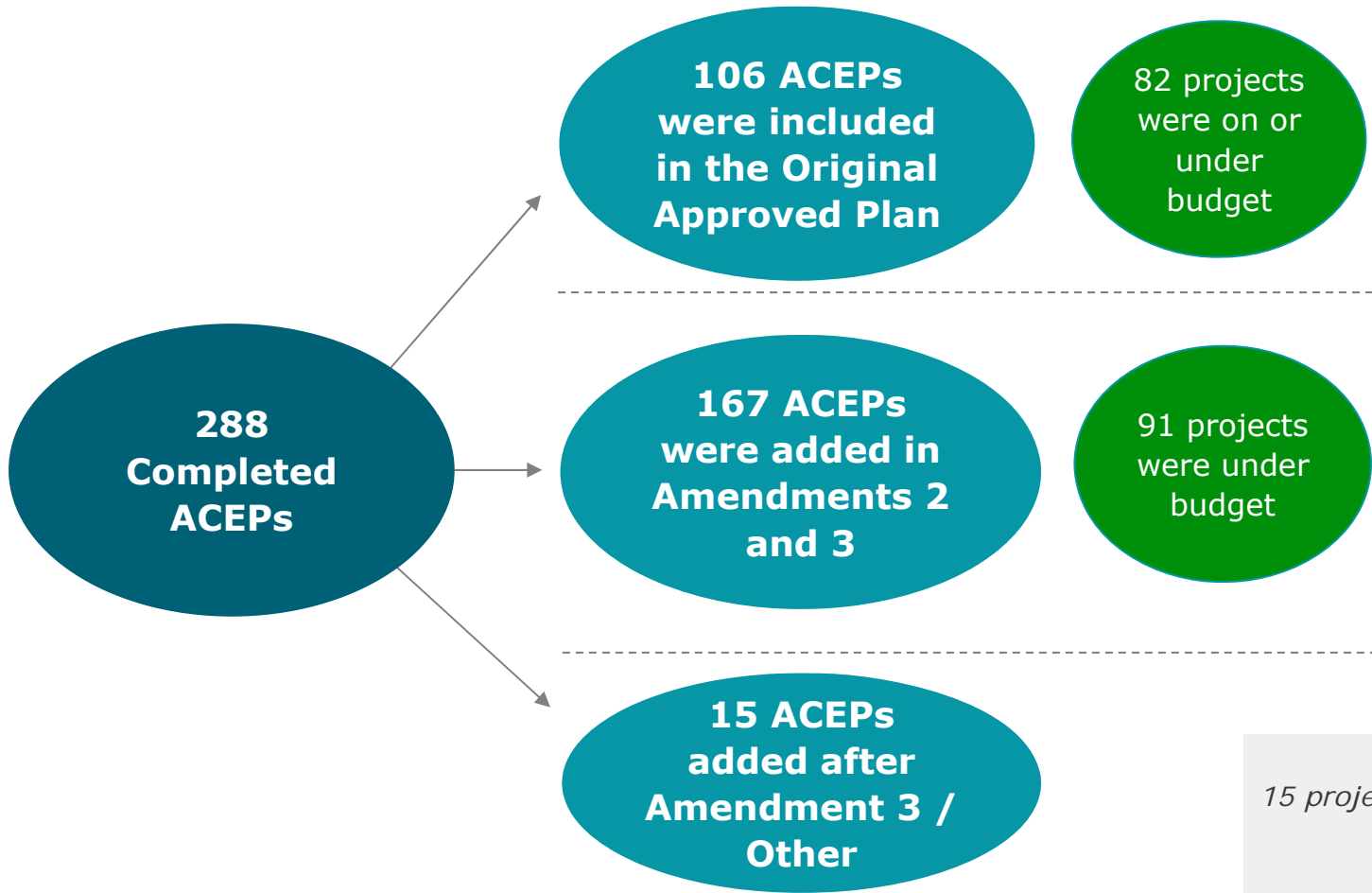
The 2015-2019 Capital Program has come through at least five iterations, which makes tracking cost overruns challenging; however, broad conclusions can be made

Agency	Agency - Category - Elements	Original Submitted Plan (Sep 14)		Original Approved Plan (May 16)		Amendment 2 (Jul 17)		Amendment 3 (May 18)		Q2 2019 Capital Dashboard	
		ACEP	Total Cost (\$M)	ACEP	Total Cost (\$M)	ACEP	Total Cost (\$M)	ACEP	Total Cost (\$M)	ACEP	Total Cost (\$M)
New York City Transit	33	316	\$13,602	365	\$15,443	513	\$15,754	630	\$16,095	742	\$16,162
Capital Construction	9	70	\$5,519	72	\$4,956	71	\$7,135	102	\$7,652	101	\$7,652
MTA Interagency / SIRTOA / Bus	10	97	\$4,209	103	\$1,045	54	\$1,258	61	\$1,265	42	\$1,043
Long Island Rail Road	16	86	\$3,120	90	\$2,835	107	\$2,956	126	\$2,859	130	\$2,859
Bridges and Tunnels	47	90	\$3,056	96	\$2,856	90	\$2,940	92	\$2,936	91	\$2,868
Metro-North Railroad	12	85	\$2,541	86	\$2,321	97	\$2,414	103	\$2,462	105	\$2,456
Total	127	744	\$32,046	812	\$29,456	932	\$32,457	1,114	\$33,270	1,211	\$33,040

- The change in the number of ACEPs, which is due to both the manner in which projects are listed and significant additions and deletions from the original scope, make tracking cost overruns on an ACEP level a challenge
- Between the Original Approved Plan Overall and the Q2 2019 Capital Dashboard, Forecasted Commitments have increased by **12%** from **\$29.5B** to **\$33.0B**. The number of ACEPs has increased by **49%** from **812** to **1,211**
- Approximately **37%** of the project value started late according to Q2 2019 Capital Dashboard, due in part to the 18 month delay in the approval of the plan
 - The current value of these projects is **\$12.2B** and the average delay was 16-18 months
 - In addition to the approval delay, the need to finish the 2010-2014 Capital Program may have also created further delays
 - At the very least, these substantial delays lead to inflation cost increases
- Completed projects have experienced cost overruns

Source: Q2 2019 version of the 2015-2019 Capital Dashboard and MTA Capital Program submissions and amendments

Evaluation of completed projects in the 2015-2019 Capital Program showed 100 of the 288 completed ACEP came in over budget



15 projects were either added post Amendment 3 or did not have sufficient information to be evaluated

Source: Q2 2019 version of the 2015-2019 Capital Dashboard and MTA Capital Program submissions and amendments

Current decentralized approach among the agencies to address capital needs in the same asset class potentially creates duplication in efforts from design to execution

Asset Class	Agency	Project	Budget (\$M)	Potential opportunities and next steps
Rolling Stock (Procurement)	LIRR	L70101ME (M9)	\$368.8	<ul style="list-style-type: none"> • Potential Opportunities: <ul style="list-style-type: none"> ○ Standardized selection and specifications of rolling stock should drive concentration of key procurement and design resources and also reduce administrative efforts (reporting, record keeping, data aggregation, and other transactional activities) ○ Consolidation of RFP efforts with fewer contracts should attract strategic suppliers to compete. This would potentially reduce duplicated efforts from suppliers in responding to multiple similar RFPs ○ RFP based on consolidated volume could create scale that is needed for pricing power and potential savings on overall procurement project
	MNR	M7010102 (M8)	\$116.2	
		T7010101 (R211)	\$1,422.1	
	NYCT (include SIR)	T7010102 (R211)	\$79.9	
		S7070101 (R211)	\$257.5	
Buses (Procurement)	NYCT	T7030206	\$38.8	<ul style="list-style-type: none"> • Recommendation on next steps: <ul style="list-style-type: none"> ○ Deep dive into the selected rolling stock and buses procurement projects and validate hypotheses on source of duplication indicated above ○ Leverage transformation initiative to unlock resources through efforts consolidation
	MTA Bus	U7030202	\$192.5	
Total			\$2,475.9	

Current decentralized approach among the agencies to address capital needs in the same asset class potentially creates duplication in efforts from design to execution (continued)

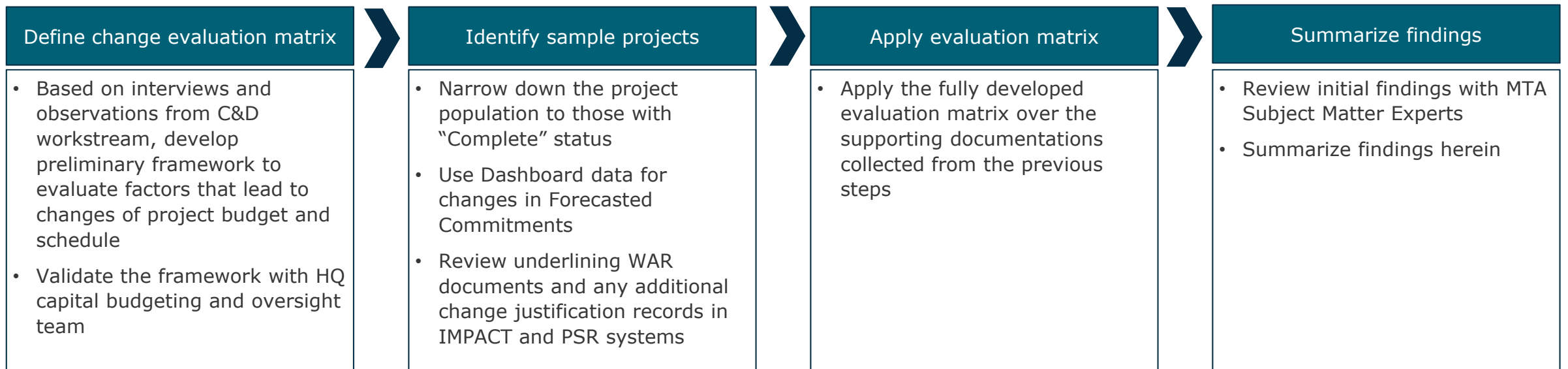
Asset Class	Agency	Project	Budget (\$M)	Potential opportunities and next steps
Stations	LIRR	L70204V5 (Enhanced Station Initiative)	\$94.0	<ul style="list-style-type: none"> • Potential Opportunities: <ul style="list-style-type: none"> ○ With consideration of all nature of the work and geographical characteristics, consolidation of capital construction needs from the same asset class is likely to create efficiency on design efforts, standard adoption, access planning, PM resources, and construction resources ○ MTA wide capital construction project on similar assets should attract qualified contractors to work with MTA with longer terms and larger scales, in turn, the efficiency gain from contractors can potentially pass back to MTA ○ Routine capital construction projects can provide predictability to capital project planning, locking in resources and funding, and reducing probability of changes during execution
	MNR	M7020213 (Enhanced Station Initiative)	\$123.0	
		T7041297 (Enhanced Station Initiative)	\$38.0	
		T7041298 (Enhanced Station Initiative)	\$38.0	
	NYCT (include SIR)	T7041299 (Enhanced Station Initiative)	\$38.0	
		S7070112 (Richmond Valley SIR [SBDP] Enhanced Station Initiative)	\$8.2	
Track	LIRR	L70301WB (2016 Track Program)	\$66.7	<ul style="list-style-type: none"> • Recommendation on next steps: <ul style="list-style-type: none"> ○ Deep dive into the selected capital construction projects in stations and track and validate hypotheses on source of duplication indicated above ○ Leverage transformation initiative to unlock resources through efforts consolidation
	MNR	M7030101 (2016 Cyclical Track Program)	\$22.9	
		6th Ave/Culver Line (2018 Mainline Track Repl)	\$25.0	
	NYCT (include SIR)	SIR Mainline Track Replacement	\$48.2	
Total			\$502.0	

For common assets needed across different agencies, MTA wide capital investment validation, supported by agencies, is critical to avoid potential investment duplication

Asset of interest	Agency	Project	Budget (\$M)	Potential opportunities and next steps
Diesel Locomotive Shop (needed for locomotive maintenance at both LIRR and MNR)	MNR	M5060103 (new Diesel Locomotive Shop at Harmon complex, including coach shop, power and yard work, Capital Program 2005 – 2009) (The full project involved rebuilding the entire Harmon complex, projects covered across several recent capital programs)	\$279.0 <i>Final allocation</i>	<ul style="list-style-type: none"> • Potential Opportunities: <ul style="list-style-type: none"> ○ After taking into consideration geographic location and logistics, if the capacity of Diesel Locomotive Shops exceeds the forecasted demand from LIRR and MNR, redundant capital investment (a form of asset duplication) would exist ○ Efforts of planning, designing, and project approval before actual execution on LIRR project could be duplicated as a result
	LIRR	L70601YG (new Diesel Locomotive Shop)	\$102.3	<ul style="list-style-type: none"> • Recommendation on next steps: <ul style="list-style-type: none"> ○ Deep dive into the actual demand of Diesel Locomotive and compare that to full operating capacity of the two shops ○ Evaluate existence of duplication and the extent of duplication ○ Establish approval protocol to avoid cross agencies asset investment duplication during budgeting and planning process

In order to gain a better understanding of the project budgeting process we selected seven completed projects for review

Review Methodology



Projects (Completed) Selected for Review

	MTA Project	Category Description	Element Description
1	T7030202	BUSES	BUS REPLACEMENT
2	T7041243	PASSENGER STATIONS	STATION WORK
3	T7050232	TRACK	MAINLINE TRACK REHABILITATION
4	T7080337	SIGNALS & COMMUNICATIONS	SIGNAL MODERNIZATION
5	M7030302	TRACK AND STRUCTURES	WEST OF HUDSON INFRASTRUCTURE
6	L70301WB	TRACK	ANNUAL TRACK REHAB PROGRAM
7	D704TN60	UTILITIES	THROGS NECK BRIDGE

Summary of observed project change impacting factors

The table below, and on the following page, is a proposed structure to categorize the factors which can lead to changes to a capital project

Category	Impacting Factor	Description	Mitigation Recommendation
Budget, Planning, and Funding Approval Process	1.1 Fixed Budgeting and Planning time frame	While size of program continues to increase greatly, the time to develop, consolidate, and submit new program budget does not change	<ul style="list-style-type: none"> As capital program continues to expand in cost and complexity, a longer preparation time window and/or additional resources are needed
	1.2 Schedule adherence	There are various reasons for missing critical dates in funding and program approval	<ul style="list-style-type: none"> Publish timeline that is mutually agreed among MTA, Board, and NY State officials from plan submission to funding approval
Scope Development Process	2.1 Specs and scope changes	Changes to deliverable requirements, specifications of the end product (rolling stocks, constructions, etc.), and geographic footprint of specific projects.	<ul style="list-style-type: none"> Set up scope change tracking mechanism and establish target to measure adherence Apply centralized approval process
	2.2 Lack of standard method and principle / discipline on scope development and adherence	No standardized scope development process/methods across all MTA agencies. Legacy practices have been used in different cases	<ul style="list-style-type: none"> Execute centralized process/methods on scope development to all MTA agencies Standardize the practice
Execution Conditions	3.1 Lack of competition	There are not sufficient contractor firms with the needed capability and competencies to bid for MTA capital projects, including rolling stocks and capital construction projects	<ul style="list-style-type: none"> Identify critical competence and capabilities MTA needs from contractors Develop strategic and long-term relationship leveraging consolidated scales of projects
	3.2 Qualified contractors	Lack of contractors with credentials that fully satisfy MTA's qualification requirements	<ul style="list-style-type: none"> Comprehensively review in-house and contractor competence, and strike balance of "build vs buy" to maximize leverage of internal and external capabilities Identify and grow long term relationship with targeted contractors proactively to reduce the challenge of qualified contractor's availability
	3.3 Internal resources	MTA capital construction workforce and capital related professional resources have not been staying up to the level needed to deliver growing number projects with increasing complexity	<ul style="list-style-type: none"> Establish long term internal resources staffing level that reflect consistent workforce demand from future capital programs Establish review and adjustment cycle in relation to 3.2

Summary of observed project change impacting factors (continued)

Category	Impacting Factor	Description	Mitigation Recommendation
Execution Conditions	3.4 Access (availability or GO leverage)	Right of way access is a controlling factor in both planning, designing, and execution of capital construction projects. Availability and maximizing GO leverage across multiple projects are two main ways of access impacts	<ul style="list-style-type: none"> Centralize access availability and planning for the whole MTA transit network, including subway, rail, and bus Maximize GO utilization across multiple capital projects
	3.5 Operation continuity requirements	The obligation to run MTA transit network 24/7 is a controlling factor guiding extent of outage needed for construction work	<ul style="list-style-type: none"> Apply operation continuity requirements in connection to access planning to entire MTA transit network, including subway, rail, and bus Set up regular schedule of operation outage rather than reactive and short-term ones in relation to capital projects
	3.6 Field conditions	Complexity of field conditions is an inherent factor from aging assets portfolio	<ul style="list-style-type: none"> Establish guidelines to count for potential field condition impacts to construction, leveraging past project experiences specific to certain asset classes and geographic locations Apply reliable technology to minimize unexpected field conditions impact
	3.7 SBMP ¹ contractors mandate	Needs on smaller projects (<\$1M, <\$3M, \$3M-\$5M) to satisfy the small business and diversity contractors requirement, creating additional Force Account cost via SBMP	<ul style="list-style-type: none"> Centralize SBMP program and related capital project planning and management in connection to overall MTA capital program
Projects Trade-off	4.1 Government priority or emergency	Required projects directed by NY State and other key stakeholders' organization (MTA board, NYC, etc.)	<ul style="list-style-type: none"> Set up overall guideline on managing government priority and emergency, leveraging Sandy and other open projects experiences
	4.2 Budget reallocation among existing projects	Budget can be moved around within a group of projects, driven by actions toward different asset classes, resulting increase, decrease, or postponement of project(s)	<ul style="list-style-type: none"> Upgrade supporting systems / software to enable tracing reallocation and trade-off activities among different projects
	4.3 Fixed budget envelope trade-off caused by new projects	Addition of ad hoc project requires program budget rebalancing among exiting projects in any given capital program	<ul style="list-style-type: none"> Establish guideline and approval process for qualified reallocation and trade-off activities Track evolution of projects throughout a capital program

[1] Small Business Mentorship Program

T7030202 – Bus Replacement

Project Forecast Evolution

Amounts in thousands

Budget Submission As Of	Description	2015 Allocation	2016 Allocation	2017 Allocation	2018 Allocation	2019 Allocation	Out Years Allocation	Total
Original Approved Plan	Purchase 138 Standard CNG Buses	\$300	\$84,750	-	-	-	-	\$85,050
Amendment 2	Purchase 138 Standard CNG Buses	\$300	\$93,996	-	-	-	-	\$94,296
Amendment 3	Purchase 138 Standard CNG Buses	\$181	\$84,104	\$764	\$9,246	-	-	\$94,295
Q2 2019 Capital Dashboard	Purchase 138 Standard CNG Buses	\$181	\$84,255	\$764	-	-	\$9,096	\$94,296

Comments:

1. Out years allocation (\$9M) is a reserve and is not committed. The buses have been delivered and all required customer amenities have been implemented.

Project Change Analysis

Category	Impacting Factor	Note
Budget, Planning, and Funding Approval Process	NA	
Scope Development Process	2.1 Specs and scope changes	• Additional customer amenities were required to be added to the bus specs
Execution Conditions	NA	
Projects Trade-off	4.1 Government priority or emergency	• NYS requirement

Source: Q2 2019 version of the 2015-2019 Capital Dashboard and MTA Capital Program submissions and amendments

T7041243 – Station Work

Project Forecast Evolution

Amounts in thousands

Budget Submission As Of	Description	2015 Allocation	2016 Allocation	2017 Allocation	2018 Allocation	2019 Allocation	Out Years Allocation	Total
Original Approved Plan	Street Stairs: 10 Locs [SBDP]	\$351	\$5,226	-	-	-	-	\$5,577
Amendment 2	Subway Street Stairs: 5 Locs / Var 2017 [SBDP]	-	\$351	\$2,502	-	-	-	\$2,853
Amendment 3	Subway Street Stairs: 4 Locs / Var 2017 [SBDP]	-	\$142	-	\$2,712	-	-	\$2,854
Q2 2019 Capital Dashboard	Repair of Subway Street Stairs at 4 Locations on Various Lines (SBMP) – Design Only	-	\$801	-	-	-	-	\$801
	T70412H4 Vernon Blvd - Jackson Av Flushing Line	-	-	-	-	\$1,491	-	\$1,491
	T70412H5 Grand Ave - Newtown Queens Blvd Line	-	-	-	-	\$888	-	\$888
	T70412H6 Kingsbridge Road Concourse Line	-	-	-	-	\$935	-	\$935
	T70412H7 Fulton St Crosstown Line	-	-	-	-	\$719	-	\$719

Comments:

1. The original single ACEP was expanded to 5 ACEPs in the latest program record (blue sheet pages); the overall Forecasted Commitment was \$4.8M, reaching original overall budget for 10 locations.
2. Potential efficiency improvement could exist in all SBMP projects through performance management and consistent approach to manage SBMP contractors.

Source: Q2 2019 version of the 2015-2019 Capital Dashboard and MTA Capital Program submissions and amendments

T7041243 – Station Work (continued)

Project Change Analysis

Category	Impacting Factor	Note
Budget, Planning, and Funding Approval Process	NA	
Scope Development Process	2.1 Specs and scope changes 2.2 Lack of standard method and principle / discipline on scope development and adherence	<ul style="list-style-type: none"> Geographic scope changed from 10 to 4 locations While breaking out budget by asset type and/or location can offer greater insight into project budget, scope and schedule, it also makes it more difficult to track projects
Execution Conditions	3.7 SBMP contractors mandate	<ul style="list-style-type: none"> Similar work within same asset type (stairs) was broken down to smaller pieces (by location in this case) to satisfy SBMP program; no clear cost justification test to be satisfied
Projects Trade-off	4.2 Budget reallocation among existing projects	<ul style="list-style-type: none"> With much smaller scope (4 locations vs 10 locations), the project(s) consumes the same level capital, including ~28% of overall spend in designing Needs better clarity and transparency on documented justification, why and how this was approved

Source: Q2 2019 version of the 2015-2019 Capital Dashboard and MTA Capital Program submissions and amendments

T7050232 – Mainline Track Rehabilitation: Project Forecast evolution

Project Forecast Evolution

Amounts in thousands

Budget Submission As Of	Description	2015 Allocation	2016 Allocation	2017 Allocation	2018 Allocation	2019 Allocation	Out Years Allocation	Total
Original Approved Plan	2016 Mainline Track Replacement QBL	-	\$18,400	-	-	-	-	\$18,400
Amendment 2	2016 Mainline Track Repl: Queens Blvd	-	\$46,785	-	-	-	-	\$46,785
Amendment 3	2016 Mainline Track Repl: Queens Blvd	-	\$46,785	-	-	-	-	\$46,785
Q2 2019 Capital Dashboard	2016 Mainline Track Replacement on the Queens Boulevard Line	-	\$32,375	-	-	-	-	\$32,375

Comments:

1. Initial budget does not reflect the full budget needs. It was based on MTA internal funding availability before external fund could be approved. After the funding was approved, Forecasted Commitment reflected the full estimation of the project cost.
2. The reason that the final budget is ~31% lower than full budget is mainly because savings from leveraging existing access General Order (GO) from another project.
3. Project was completed on time with lower cost needed. Need to standardize unit cost to replace track (\$/mile track) to justify reasonable budget / cost.

Project Change Analysis

Category	Impacting Factor	Note
Budget, Planning, and Funding Approval Process	1.2 Schedule adherence	• Capital program approval was delayed for 18 months. Initial budget reflected the amount of initial funds that could be borrowed from MTA Pay-Go capital to get the project started
Scope Development Process	NA	
Execution Conditions	NA	
Projects Trade-off	NA	

Source: Q2 2019 version of the 2015-2019 Capital Dashboard and MTA Capital Program submissions and amendments

T7080337 – Signal Modernization: Project Forecast evolution

Project Forecast Evolution

Amounts in thousands

Budget Submission As Of	Description	2015 Allocation	2016 Allocation	2017 Allocation	2018 Allocation	2019 Allocation	Out Years Allocation	Total
Original Approved Plan	-	-	-	-	-	-	-	-
Amendment 3	Signals Improvements (SAP)	-	-	\$22,000	\$90,000	-	-	\$112,000
Q2 2019 Capital Dashboard	Subway Action Plan: Signals Improvements	-	-	\$55,050	\$151,755	\$7,350	-	\$214,154

Comments:

1. A total of \$348M was added to MTA 2015-2019 Capital Program as part of the Subway Action Plan in reaction to the declared state of emergency. As of Amendment 3, \$287M was allocated to signal work in two separate ACEPs. This ACEP (T7080337) was adjusted from \$112M to \$214M via a reallocation with ACEP T7080339. The total among the two ACEPs remained constant.

Project Change Analysis

Category	Impacting Factor	Note
Budget, Planning, and Funding Approval Process	1.1 Fixed Budgeting and Planning time frame	<ul style="list-style-type: none"> This is an ad hoc project without consideration during the regular program planning and approval process
Scope Development Process	2.1 Specs and scope changes	<ul style="list-style-type: none"> No master plan, reactive to the state of emergency. There was no design and scoping phase during approval process; scoping and design were only started 2 years after the 2015-2019 capital program started
Execution Conditions	3.2 Qualified contractors 3.3 Internal resources	<ul style="list-style-type: none"> MTA employees were pulled from other projects in the interest of time. The projects they were pulled from were then backfilled by outside contractors
Projects Trade-off	4.1 Government priority or emergency	<ul style="list-style-type: none"> This project was added as part of the Subway Action Plan

Source: Q2 2019 version of the 2015-2019 Capital Dashboard and MTA Capital Program submissions and amendments

M7030302 – West of Hudson Track Improvements

Project Forecast Evolution

Amounts in thousands

Budget Submission As Of	Description	2015 Allocation	2016 Allocation	2017 Allocation	2018 Allocation	2019 Allocation	Out Years Allocation	Total
Original Approved Plan	West of Hudson Track Improvements	\$5,467	\$1,000	\$3,533	-	-	-	\$10,000
Amendment 2	West of Hudson Track Improvements	\$5,467	\$1,000	\$3,533	-	-	-	\$10,000
Amendment 3	West of Hudson Track Improvements	\$2,213	\$1,000	\$6,254	-	\$533	-	\$10,000
Q2 2019 Capital Dashboard	West of Hudson Track Improvements	\$2,213	\$1,000	\$6,754	\$82	\$5,427	-	\$15,476

Comments:

1. New Jersey Transit operates and maintains this part of the track for Metro-North. Metro-North owns the asset and capital investment activities.
2. The project was scheduled to be delivered within budget as of Q1 but has now incurred \$5.4M of additional cost due to added New Jersey Transit construction.

Project Change Analysis

Category	Impacting Factor	Note
Budget, Planning, and Funding Approval Process	1.1 Fixed Budgeting and Planning time frame	<ul style="list-style-type: none">\$5M was added to the budget in Q2 2019, after the project was labeled complete, due to the added 2019 NJT construction program
Scope Development Process	NA	
Execution Conditions	3.3 Internal resources	<ul style="list-style-type: none">In house resources were dedicated to the project execution
Projects Trade-off	NA	

Source: Q2 2019 version of the 2015-2019 Capital Dashboard and MTA Capital Program submissions and amendments

L70301WB – Annual Track Program

Project Forecast Evolution

Amounts in thousands

Budget Submission As Of	Description	2015 Allocation	2016 Allocation	2017 Allocation	2018 Allocation	2019 Allocation	Out Years Allocation	Total
Original Approved Plan	2016 Annual Track Program	-	\$60,000	-	-	-	-	\$60,000
Amendment 2	2016 Annual Track Program	-	\$65,000	-	-	-	-	\$65,000
Amendment 3	2016 Annual Track Program	-	\$66,710	-	-	-	-	\$66,710
Q2 2019 Capital Dashboard	2016 Annual Track Program	-	\$66,710	-	-	-	-	\$66,710

Comments:

1. The project has been delivered approximately 10% over Original Approved Plan.
2. Need to standardize unit cost to replace track (\$/mile track) to justify reasonable budget / cost.

Project Change Analysis

Budget, Planning, and Funding Approval Process	NA	
Scope Development Process	NA	
Execution Conditions	3.3 Internal resources	• In house resources were dedicated to the project execution
	3.4 Access (availability or GO leverage)	• Weather permitting, the project actually pulled forward 2019 track work
Projects Trade-off	NA	

Source: Q2 2019 version of the 2015-2019 Capital Dashboard and MTA Capital Program submissions and amendments

D704TN60 – Throgs Neck Bridge Anchorage

Project Forecast Evolution

Amounts in thousands

Budget Submission As Of	Description	2015 Allocation	2016 Allocation	2017 Allocation	2018 Allocation	2019 Allocation	Out Years Allocation	Total
Original Approved Plan	Anchorage Dehumidification	\$39,067	-	-	-	-	-	\$39,067
Amendment 2	Anchorage Dehumidification	\$43,547	-	-	-	-	-	\$43,547
Amendment 3	Anchorage Dehumidification	\$43,547	-	-	-	-	-	\$43,547
Q2 2019 Capital Dashboard	Construction of an Anchorage Dehumidification System – Throgs Neck Bridge	\$40,593	-	-	-	-	-	\$40,593

Comments:

1. Lane closure restrictions during the summer of 2017 delayed construction activity and increased overall Forecasted Commitment estimate.

Project Change Analysis

Category	Impacting Factor	Note
Budget, Planning, and Funding Approval Process	NA	
Scope Development Process	NA	
Execution Conditions	3.4 Access (availability or GO leverage) 3.5 Operation continuity requirements	• Lane closure was limited in order to ensure operation continuity
Projects Trade-off	NA	

Source: Q2 2019 version of the 2015-2019 Capital Dashboard and MTA Capital Program submissions and amendments



Section 3: Capital Construction KPIs & Metrics

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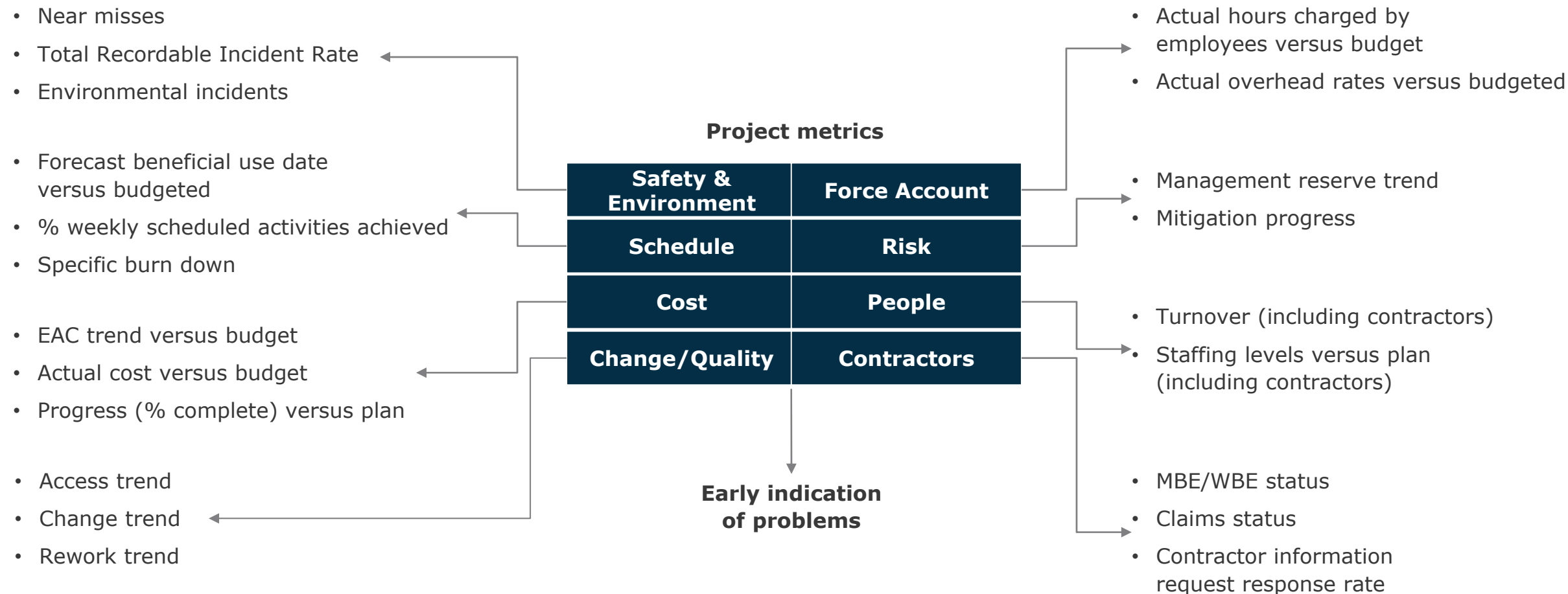
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We propose more robust and consistent processes to collect and manage critical performance measurements

	Current observed practices	Risks with current practices		Proposed process changes	Benefits
1	Agencies hire, train, develop project managers and develop their own approaches to scheduling, budgeting, contractor management, etc.	Current practices lead to silos and inconsistent approaches Metrics are inconsistent and difficult to compare between projects		Project manager hiring, development, processes, tools, etc. is centralized in an internal PM organization and project teams are deployed to the agencies	All stakeholders are using the same language and possess the same understanding within and between projects
2	Project management is performed from a remote office location	Project management and control are disconnected from the realities of the field	➤	Capital construction projects need boots on the ground where the construction is taking place; front line supervision and project control should be co-located	Information currency and ability to respond to emergent project needs
3	Biggest issue with many projects is track access; there is no way to coordinate access to the tracks sitting on the 8th floor of 2 Broadway	Project will likely be delayed as a result of compromised access		Multi-functional teams consisting of project managers and operators meet on a regular basis (weekly) to review work plans and priorities – preferably co-located on work site	Improved levels of communication and transparency; ability to develop workarounds to emergent challenges associated with access

A project management Center of Excellence (COE) should be established to ensure consistency in people, process, and tools

We recommend capital program performance metrics across eight dimensions



Detailed suggested project metrics (1 of 4)

Area	Metric	Description and rationale	Formula	Target
Safety and Environment	Near misses	Safety is critical to a well run project. Near misses is a good leading indicator of weaknesses in safety management	<ul style="list-style-type: none"> Number of near misses x 200,000 / total number of hours worked in a year 	<ul style="list-style-type: none"> Near miss reporting should be encouraged
Safety and Environment	Total recordable incident rate	TRIR is one measure of actual incidents	<ul style="list-style-type: none"> Number of Incidents x 200,000 / total number of hours worked in a year 	<ul style="list-style-type: none"> <0.2
Safety and Environment	Environmental incidents	Minimizing environmental incidents (spills, etc.) is also critical	<ul style="list-style-type: none"> Number of environmental incidents 	<ul style="list-style-type: none"> 0
Schedule	Forecast beneficial use date vs. budgeted	MTA projects are ultimately for the benefit of the public. The public cares most when the service is available vs. substantial completion or other dates	<ul style="list-style-type: none"> Forecast beneficial use date Budgeted beneficial use date Difference 	<ul style="list-style-type: none"> <5% variance (+ or -)
Schedule	% weekly scheduled activities achieved	Important leading metric is whether the project is completing their planned activities versus any available activities	<ul style="list-style-type: none"> Number of scheduled activities completed / total number of activities scheduled in the previous week 	<ul style="list-style-type: none"> <5% variance (+ or -)
Schedule	Specific burn down	Every stage of a project has specific activities that need to be completed, e.g., construction drawings, punch clearing, tests	<ul style="list-style-type: none"> Total number required Total remaining Required per week Number cleared in the last week 	<ul style="list-style-type: none"> <5% variance (+ or -)

Detailed suggested project metrics (2 of 4)

Area	Metric	Description and rationale	Formula	Target
Cost	Progress (% complete) vs. plan	At the end of the day, projects need to get the physical work done. Total spent is not a good measure of physical progress because the money may have been spent more or less efficiently than planned	<ul style="list-style-type: none"> Current progress to date/planned progress = Schedule Performance Index (SPI) 	<ul style="list-style-type: none"> SPI between 95% and 105% for period and cumulative
Cost	Actual vs. budget cost	Obviously, tracking actual expenditures versus plan is important. Comparing with the planned spend is irrelevant because the actual work and the planned work may be very different. Instead, the valid comparison is the actual cost relative to the budget cost of the work performed, e.g., though a resource loaded schedule	<ul style="list-style-type: none"> Cumulative actual and budget cost by month Budget cost of work performed/Actual Cost = Cost Performance Index (CPI) 	<ul style="list-style-type: none"> CPI between 95% and 105% for period and cumulative
Cost	EAC trend vs. budget	EAC stability is an important leading indicator	<ul style="list-style-type: none"> EAC by month both management approved and math extension 	<ul style="list-style-type: none"> No change for management EAC <20% change in math extension EAC
Change/Quality	Access trend	Brownfield projects are challenging. Successfully dovetailing track or other access is critical for projects to be on schedule	<ul style="list-style-type: none"> Actual access (e.g., days or hours) achieved vs. commitment 	<ul style="list-style-type: none"> 95% on access commitments to the project
Change/Quality	Change trend	Level of change is an important leading indicator; high number of changes late in the project will likely be an indicator of delay	<ul style="list-style-type: none"> Drawing revisions vs. total planned drawing Number of changes outstanding Number of new changes 	<ul style="list-style-type: none"> <5% drawing revision at >75% complete

Detailed suggested project metrics (3 of 4)

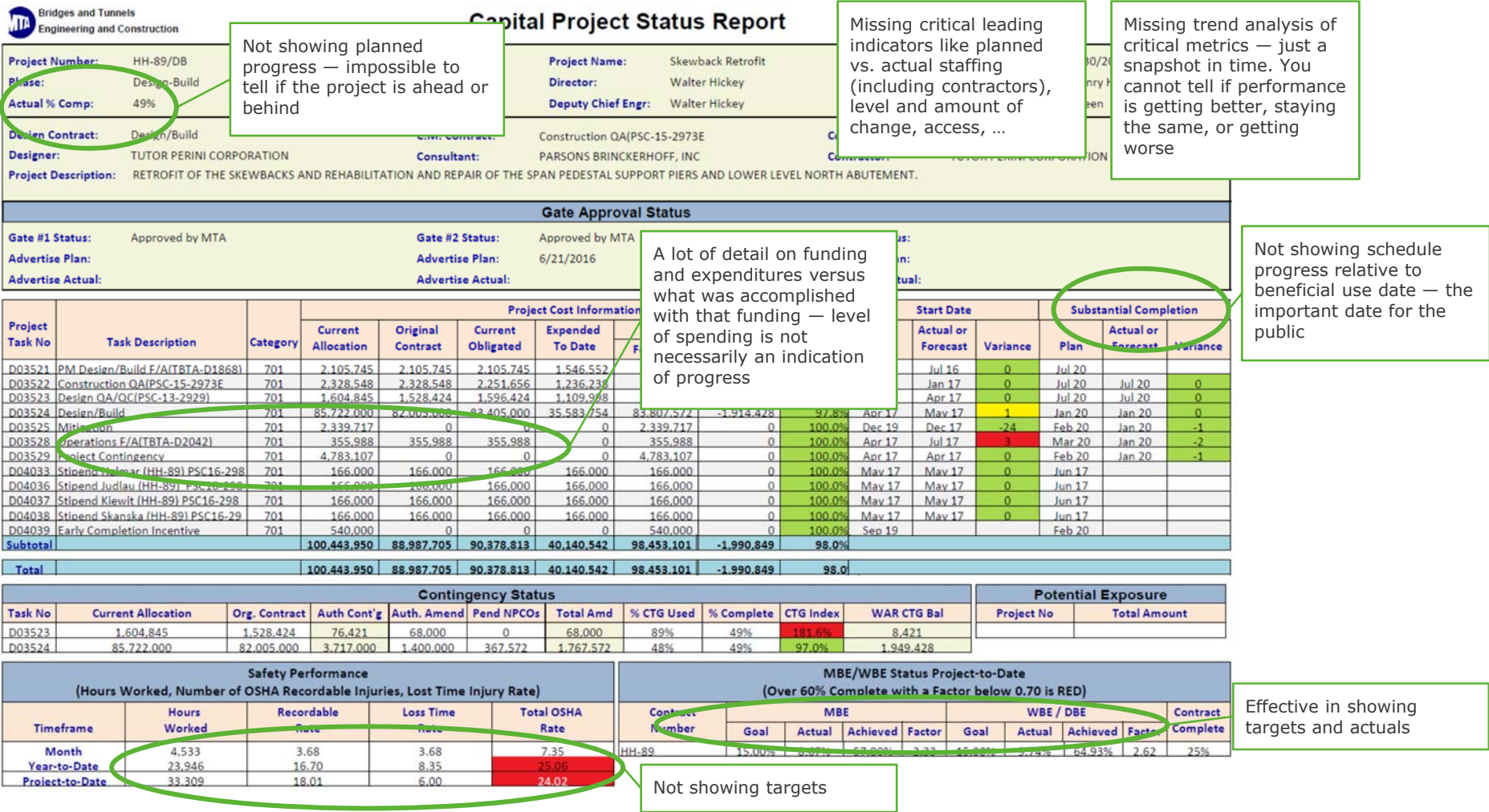
Area	Metric	Description and rationale	Formula	Target
Change/Quality	Rework trend	Level of rework or quality issues is an important leading indicator	<ul style="list-style-type: none"> Rework hours/baseline planned hours 	<ul style="list-style-type: none"> <8% rework hours - cumulative
Force Account	Actual hours charged by employees vs. budget	Tracking force account costs is difficult as there is not much detail available Actual hours should be charged against specific scope and planned hours	<ul style="list-style-type: none"> Planned hours/actual hours 	<ul style="list-style-type: none"> <10% (+ or -)
Force Account	Actual overhead rates vs. budgeted	Tracking force account overhead rates versus the budget	<ul style="list-style-type: none"> Actual overhead rate charged to the project/budgeted overhead rate 	<ul style="list-style-type: none"> Between 98% and 102%
Risk	Contingency trend	Tracking contingency is important. Using contingency faster than plan is obviously bad sign. Being able to release contingency, e.g., because major milestones are met is obviously a good sign	<ul style="list-style-type: none"> Contingency trend over time Remaining contingency/plan 	<ul style="list-style-type: none"> Greater than 95%
Risk	Mitigation progress	Mitigation actions are typically added to the project schedule and progress of those also need to be measured	<ul style="list-style-type: none"> Current mitigation action progress to date/planned progress 	<ul style="list-style-type: none"> Between 95% and 105%

Detailed suggested project metrics (4 of 4)

Area	Metric	Description and rationale	Formula	Target
People	Turnover (including contractors)	High turnover hurts project performance and is an important leading indicator	• Total turnover/average number of employees for 12 month period	• <30%
People	Staffing levels vs. plan (including contractors)	Being able to staff projects relative to plan is another important leading indicator	• Actual FTE/Planned FTE	• <10% (+ or -)
Contractors	MBE/WBE Status	Minority and woman owned business enterprise metrics is important for compliance	• Actual spending to MBE,WBE/target	
Contractors	Claims status	Number of claims filed against contractors Number of contractor claims/counter claims Number of claims resolved in our favor	• Claims – counter claims = net claims	• Net claims value >\$0 cumulative
Contractors	Contractor information request response rate (RFI)	Timeliness of response for contractor Number of outstanding RFIs RFI aging	• RFI aging • RFI opened vs. RFI closed	• 95% RFIs cleared within contractual agreements • <1 for open/closed for the period

Current MTA Project Status Reports tend to focus on funding and expenditures – we recommend that this focus shifts toward progress and leading indicators

Example PSR





Section 4: Cash Flow Review

July 31, 2019

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The Report is incomplete without reference to, and should be viewed solely in conjunction with, any oral briefing provided by AlixPartners which forms part of the Report.

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Background and Key Terms

Background Facts

- The MTA's cash balances fall into one of three buckets
 1. Operating
 2. Capital
 3. Unrestricted Capital Liquidity
 - Unrestricted Capital Liquidity is used to directly fund the capital program. Withdrawals from Unrestricted Capital Liquidity have also been used to cover operating shortfalls.
- In recent years, the MTA's operating revenue has accounted for ~ 50% of its expenses with the remainder covered by subsidies.
- The Unrestricted Capital Liquidity fund was drawn on for a \$700M borrowing from the Unrestricted Capital Liquidity fund in June 2018 which was repaid in December 2018.
 - The Unrestricted Capital Liquidity fund was drawn again in the amount of \$700M in January 2019 and another \$300M in May 2019. This borrowing must be repaid no later than the end of the next calendar year unless the Board authorizes a write-off as permanent working capital, which would result in a reduction of funding for the Capital Program.
- Since the onset of the budget reduction program in 2010, the MTA estimates it has achieved ~ \$2.5B of annually recurring savings. Prior savings include changes to paratransit, maintenance / operations, administration, benefits, service support, and customer convenience.
- In addition to the annual recurring savings, the MTA has also utilized one-time adjustments over the last three years.

Key Terms

- **Operating Liquidity:** the funds dedicated to operating activity. In the period reviewed, 19 different accounts were comprised of these funds
- **Unrestricted Capital Liquidity:** Fund 2631, *MTA General Resolution Transportation Revenue*, is an unrestricted fund used both to fund capital projects and also accessed in certain situations to fund operations. When funds are used for operations a loan is documented with the intention of repayment. This account includes the 'Pay-Go' contributions from operations to capital
- **Restricted Capital Funds:** the 84 funds which are dedicated to funding capital programs and the associated debt
- **Operating and Unrestricted Liquidity:** the sum of the Operating Liquidity and the Unrestricted Capital Liquidity, both defined above
- **Budget Adjustments:** one-time items used to balance the current year budget. In the past three years, these items have included savings initiatives not yet implemented and non-recurring savings (i.e. - "One-Shot" savings)
- **Recurring Savings:** savings initiatives identified from 2010 to present
- **Capital and Other Reimbursements [Operating Revenue]:** Reimbursements for expenses classified as reimbursable are recognized as revenue. Largely comprised of Capital Program expense reimbursements and tends to increase with the volume of Capital Projects in a given year

Source: MTA documents and minutes from the meeting of the Board of Directors on July 24, 2019

Key Takeaways from Review of the Cash Flow

1

MTA has a Structural Budget Imbalance

- Increases to expenses over the last three years have outpaced revenue increases creating a deficit, even after the receipt of subsidies; this deficit has been partially offset by reductions in contributions to the capital program
- The net cash balances in the 2017, 2018, & 2019 adopted budgets have required a total of over \$750M of cost savings initiatives and one-time “adjustments” to be cash flow positive. The capacity for future one-time “adjustments” may be limited and / or will include austerity

2

Operating Liquidity is Lower in the Beginning of the Year

- This is attributable to lower than average subsidies in the first quarter and Accounts Payable timing issues at year end; Accounts Payable timing generally leads to an end of year benefit and beginning of year outflow
- In Q2 2017 & Q2 2018 operating activity turned positive as a result of the MMTOA¹ subsidy and a lower than average debt service expense in May, due to a ‘Build America Bond subsidy’

3

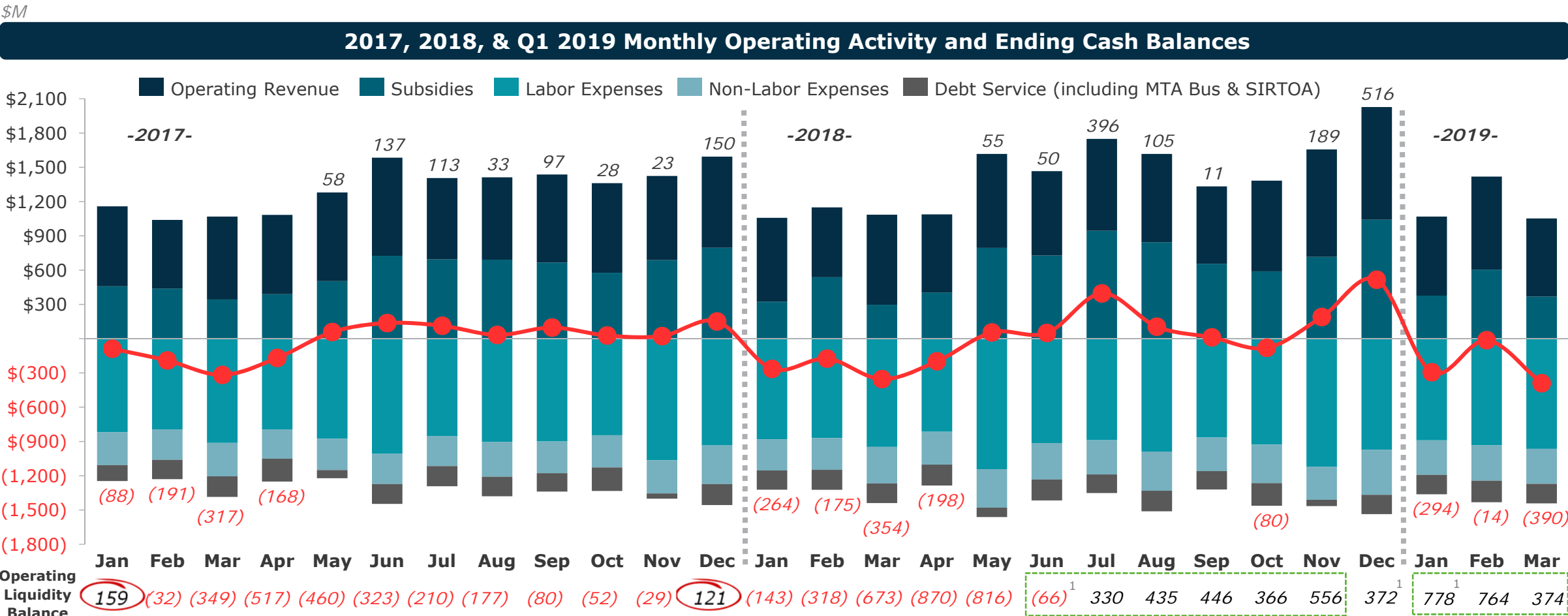
Unrestricted Capital Fund has Been Used for Operating Funding

- The shortfall in operating cash necessitated a \$700M borrowing from the Unrestricted Capital Liquidity fund in June 2018 (repaid in December 2018) and another \$1B borrowing in 2019
- Without borrowing from the Unrestricted Capital Liquidity fund, the operating liquidity would have been negative between February and November in both 2017 and 2018, leaving the MTA short of funds to meet crucial expenses, such as payroll and debt service

^[1] Metropolitan Mass Transportation Operating Assistance

Monthly Operating Cash Flows 2017 through Q1 2019

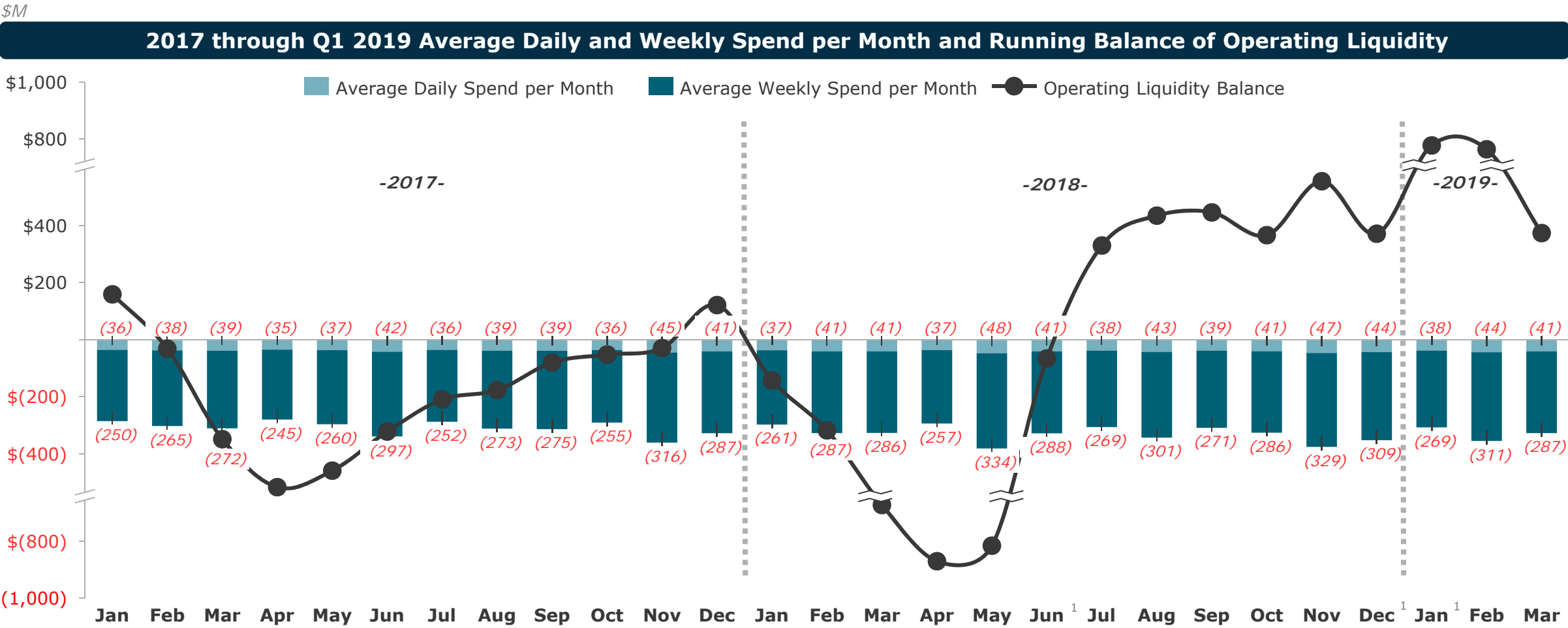
The net cash outflows in the first four months of 2017 kept the operating cash balance negative until December and would have done so in 2018 if not for a \$700M 'internal transfer' from Unrestricted Capital Liquidity. The internal transfer was repaid in December 2018 and reissued in January 2019



⁽¹⁾ The Unrestricted Capital Liquidity fund was drawn upon for \$700M in June 2018 and repaid in December 2018. It was again drawn upon in January 2019 ('Internal Transfer').
Source: MTA financial data, documents, and interviews

Monthly Operating Expenses 2017 through Q1 2019

Between 2017 and Q1 2019, the MTA spent an average of \$40M per day or \$281M per week on operating expenses



^[1] The Unrestricted Capital Liquidity fund was drawn upon for \$700M in June 2018 and repaid in December 2018. It was again drawn upon in January 2019 ('Internal Transfer').
Source: MTA financial data, documents, and interviews

Summary Analysis of Cash Flow

The MTA cash flows have little seasonality, with the exception of subsidy timing

(\$M)

	-----2017-----					-----2018-----						
	FY 2016	Q1	Q2	Q3	Q4	FY 2017	Q1	Q2	Q3	Q4	FY 2018	Q1 2019
1 Operating Revenue	\$ 8,525	\$ 2,027	\$ 2,328	\$ 2,204	\$ 2,320	\$ 8,879	\$ 2,135	\$ 2,244	\$ 2,254	\$ 2,721	\$ 9,353	\$ 2,190
2 Subsidies	6,439	1,239	1,618	2,051	2,059	6,967	1,157	1,927	2,444	2,346	7,874	1,349
3 Operating Expenses	(13,399)	(3,376)	(3,476)	(3,504)	(3,756)	(14,112)	(3,571)	(3,817)	(3,681)	(4,044)	(15,113)	(3,708)
4 Top-Side Adjustments	(4)	0	0	0	14	14	(0)	(0)	(0)	25	25	0
5 Debt Service (including MTA Bus & SIRTOA)	(1,793)	(487)	(444)	(508)	(435)	(1,873)	(514)	(448)	(504)	(423)	(1,889)	(529)
Internal Transfer (January 2019)	-	-	-	-	-	-	-	700	-	(700)	-	700
Activity	(233)	(597)	26	243	203	(125)	(794)	607	512	(75)	251	2
Operating Liquidity Balance	248	(349)	(323)	(80)	121 ¹	121	(673)	(66)	446	372	372	374
Unrestricted Capital Liquidity	2,301	2,583	2,351	1,509	2,277	2,277	2,223	766	862	1,569	1,569	668

^[1] Per the Office of Management & Budget, adjustment made for the Mortgage Recording Tax Subsidy ("MRT"). Hence, FY 2017 ending balance and Q1 2018 opening balance differ by ~ \$1.4M.

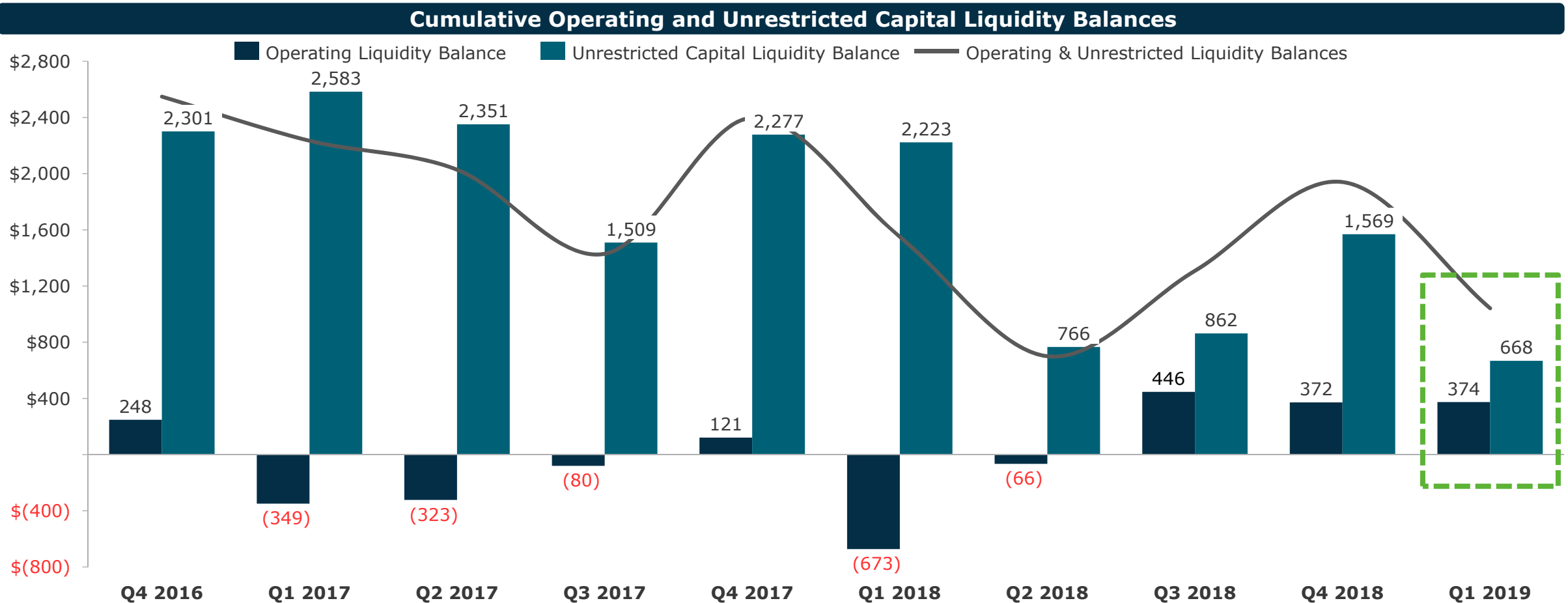
Underlying supporting detail was available on a monthly basis for 2017, 2018, and Q1 2019, but only on a full-year basis for 2016.

Source: MTA financial data, documents, and interviews

Operating Liquidity vs. Unrestricted Capital Liquidity

In contrast to the beginning of 2017 and 2018, the operating liquidity balance in Q1 2019 has remained positive due to a \$700M 'internal transfer' from unrestricted capital liquidity¹

\$M

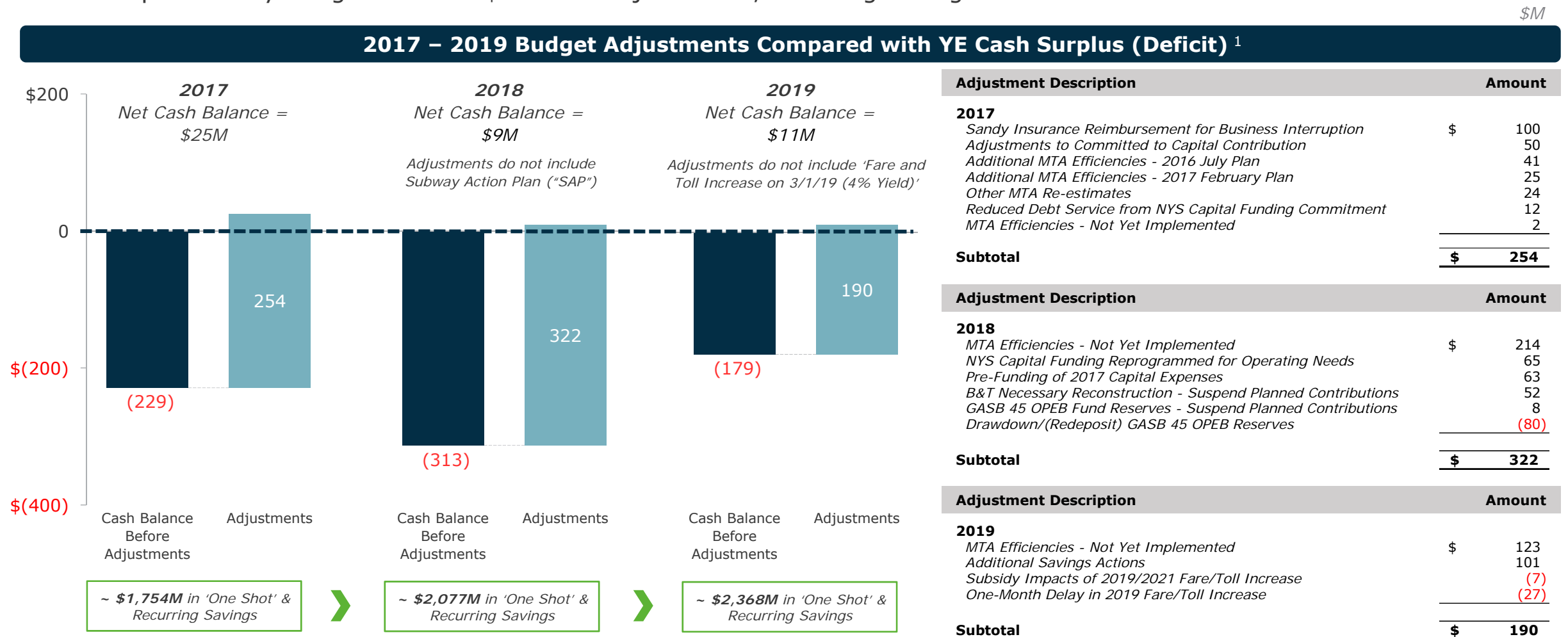


^[1] For 2019, through May 9th, 'internal transfers' from unrestricted capital totaled \$1B as a result of an additional \$300M drawn in May.

Source: MTA financial data, documents, and interviews

Budget Adjustments: 2017, 2018, & 2019

The MTA is reliant upon budget adjustments to compensate for the negative cash positions resulting from operations. The 2020 preliminary budget includes \$386M of adjustments, including savings from the MTA Transformation Plan



^[1] Adjustments from the February budget books in each fiscal year. The July 2019 budget book has updated the amount of 2019 adjustments to \$73M with the majority of other adjustments being absorbed above the line

Source: MTA financial data, documents, February Budget Books, and interviews

Quarterly Operating Revenues by Type

Farebox revenues at the MTA are largely constant. The volatility in MTA's total operating revenues is driven by capital reimbursements

\$M

	-----2017-----					-----2018-----						
	FY 2016	Q1	Q2	Q3	Q4	FY 2017	Q1	Q2	Q3	Q4	FY 2018	Q1 2019
Farebox Revenue												
NYCT	\$ 4,426	\$ 1,087	\$ 1,134	\$ 1,129	\$ 1,140	\$ 4,490	\$ 1,088	\$ 1,138	\$ 1,109	\$ 1,156	\$ 4,490	\$ 1,079
LIRR	732	175	190	190	191	746	176	193	196	198	763	180
MNR	706	167	183	184	185	720	169	184	184	190	727	171
MTA HQ	-	-	-	-	-	-	-	-	-	-	-	-
MTA Bus	211	49	57	55	55	216	51	56	57	56	220	52
SIRTOA	7	2	2	2	2	7	2	2	2	2	7	2
	6,083	1,480	1,565	1,561	1,573	6,179	1,486	1,572	1,547	1,602	6,207	1,483
Capital and Other Reimbursements												
NYCT	1,068	229	369	377	393	1,369	281	362	292	677	1,612	312
LIRR	319	62	79	76	93	310	119	84	140	148	492	83
MNR	240	43	63	59	58	224	65	56	71	72	264	71
MTA HQ	114	13	29	21	55	118	16	43	28	54	142	24
MTA Bus	5	1	1	1	1	5	1	2	1	2	6	1
SIRTOA	4	1	0	0	0	2	0	1	0	1	3	1
	1,749	349	542	535	602	2,028	482	548	533	955	2,518	493
Other Revenue												
NYCT	324	89	130	27	79	325	90	44	64	89	286	86
LIRR	47	15	11	8	7	41	12	6	6	7	31	14
MNR	86	29	24	18	15	86	19	15	56	36	126	38
MTA HQ	212	59	49	50	39	198	43	52	42	28	165	73
MTA Bus	22	6	6	4	5	20	3	8	4	4	19	2
SIRTOA	3	0	1	1	1	3	0	1	1	0	2	2
	693	198	221	108	146	673	167	125	173	164	629	214
Totals	8,525	2,027	2,328	2,204	2,320	8,879	2,135	2,244	2,254	2,721	9,353	2,190

NOTE: Bridges and Tunnels ("B & T") revenue is not included in the Farebox and Other Revenue lines. B & T overall operating surplus (Revenue net of Operating Expenses, Unrestricted Capital Liquidity, and Debt Service) is presented with subsidies.

Source: MTA financial data, documents, and interviews

Quarterly Subsidies by Type

In recent years, approximately 70% of Subsidies are received in the second half of the year; less than 20% are received in Q1. Subsidies accounted for ~ 43%, 44%, and 46% of total inflows in 2016, 2017, and 2018, respectively

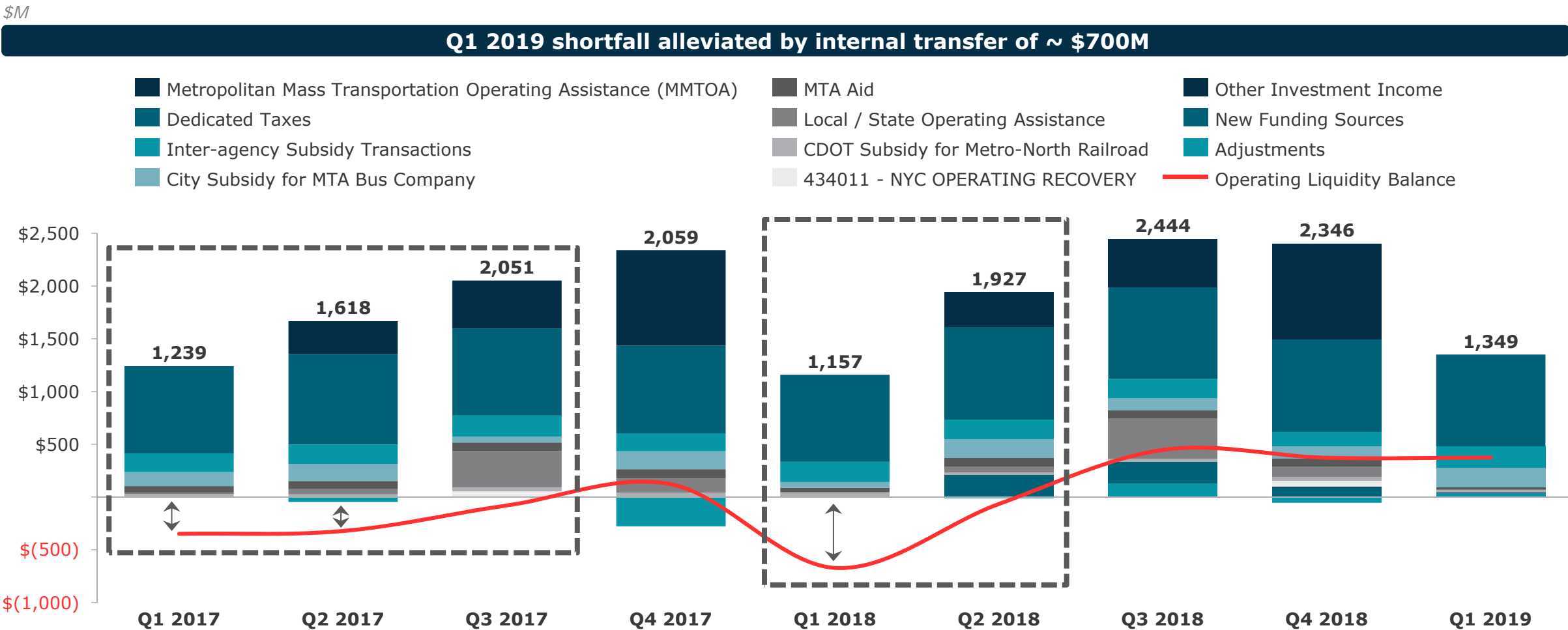
\$M

	-----2017-----					-----2018-----						
	FY 2016	Q1	Q2	Q3	Q4	FY 2017	Q1	Q2	Q3	Q4	FY 2018	Q1 2019
Metropolitan Mass Transportation Operating Assistance (MMTOA)	\$ 1,668	-	\$ 310	\$ 454	\$ 904	\$ 1,668	-	\$ 328	\$ 454	\$ 904	\$ 1,687	-
Payroll Mobility Tax (PMT)	1,373	396	405	314	320	1,436	425	382	322	354	1,483	373
Urban Tax	811	168	142	130	146	586	141	189	169	157	656	230
B & T Operating Surplus	742	178	182	200	171	731	191	185	179	137	692	199
Petroleum Business Tax (PBT)	617	147	154	161	155	617	154	150	166	161	631	154
Mortgage Recording Tax (MRT)	458	116	110	123	111	461	106	108	118	109	441	113
City Subsidy for MTA Bus Company	355	133	162	56	170	520	56	178	115	115	463	187
Payroll Mobility Tax Replacement Funds	309	-	49	98	98	244	-	49	98	98	244	-
MTA Aid	300	63	77	80	86	306	40	80	78	75	273	19
Local Operating Assistance	190	12	2	131	43	188	7	7	166	8	187	7
State Operating Assistance	188	-	47	47	94	188	-	47	47	94	188	-
Station Maintenance	162	-	-	166	-	166	-	-	169	-	169	0
CDOT Subsidy for Metro-North Railroad	134	27	25	39	40	131	39	27	31	34	130	26
434011 - NYC OPERATING RECOVERY	36	-	-	53	-	53	-	-	-	59	59	-
Other Investment Income	1	0	0	0	0	1	0	0	0	1	2	1
New Funding Sources ^[1]	-	-	-	-	-	-	-	209	202	97	508	-
MRT Adjustments	(33)	(1)	(36)	(1)	5	(34)	(1)	(1)	(1)	(30)	(33)	-
Subsidy Adjustments ^[2]	(873)	-	(12)	-	(284)	(296)	-	(12)	133	(25)	96	41
Totals	6,439	1,239	1,618	2,051	2,059	6,967	1,157	1,927	2,444	2,346	7,874	1,349
New Funding Sources												
NYS Operating Support for SAP	-					-					\$ 254	
^[1] NYC Operating Support for SAP	-					-					254	
	-					-					508	
Subsidy Adjustments												
Resource to Reduce Pension Liability	\$ (75)					-					-	
NYCT Charge Back of MTA Bus Debt Service	(12)					(12)					(12)	
Forward Energy Contracts Program - Gain/(Loss)	(30)					2					16	
Fuel Hedge Collateral	-					-					-	
^[2] MNR Repayment of 525 North Broadway	(2)					(2)					(2)	
Committed to Capital Program Contributions	(754)					(301)					(39)	
Drawdown of GASB 45 OPEB Reserves	-					17					133	
	(873)					(296)					96	

Source: MTA financial data, documents, February Budget Books, and interviews

Correlation between Quarterly Subsidies and Operating Liquidity

MMTOA subsidy significantly impacts MTA’s quarterly operating liquidity as evidenced by Q1 2017 & 2018¹



^[1] AlixPartners understands through conversations with the Office of Management & Budget that the MMTOA timing was accelerated by the State by one quarter in Q4 2002 to avoid a fare increase in the wake of the 9/11 terrorist attacks. The acceleration of the MMTOA subsidy is now permanent and when there is a State fiscal year appropriation, it allows for the full appropriation to be received in the calendar year.
Source: MTA financial data, documents, and interviews

Year-Over-Year Change in Operating Expenses – 2017 & 2018

The MTA's operating revenues were largely constant between 2016 and 2018, yet its operating expenses grew slightly more year-over-year

(% Change from Previous Period)

	FY 2017	FY 2018	Key Drivers
Overtime	20.0%	15.9%	FY 2017 Overtime Expense growth attributable to a 26% uptick at NYCT (\$776M in 2017 vs. \$617M 2016). FY 2018 Overtime Expense growth driven by a 22% increase at LIRR (\$216M in 2018 vs. \$176M in 2017)
Electric Power, Fuel, & Insurance	10.7%	8.7%	
Materials and Supplies	10.3%	8.4%	FY 2018 Contract and Claim Expense increase the result of a 23% jump at MTA HQ (\$348M in 2018 vs. \$284M in 2017) and a 17% jump at NYCT (\$1,084M in 2018 vs. \$930M in 2017)
Contracts & Claims	8.6%	14.3%	
Payroll / Health & Welfare	4.1%	4.8%	YoY percent increase in MTA's Payroll Expense includes collective bargaining and associated retroactive pay raises for represented employees in line with the labor update from MTA's consolidated financials ¹
Pension / Other Fringe Benefits	0.6%	3.0%	
OPEB Current Payments	(0.2%)	8.8%	FY 2017 improvement in Other Business Expenses and Adjustments result of a 32% decrease at MTA HQ (\$69M in 2017 vs. \$101M in 2016)
Other Business Expenses & Adjustments	(12.0%)	3.6%	

^[1] AlixPartners did not normalize payroll expense figures to account for retroactive raises due to data limitations.

NOTE: Organization wide project level expense analysis did not yield meaningful results. Over half of the expense line items in the General Ledger were not populated with project information.

Source: MTA financial data, documents, and interviews

Quarterly Labor Expenses by Type (page 1 of 2)

MTA labor expense represented approximately 75% of the total operating expenses between 2016 and 2018

\$M												
-----2017-----												
-----2018-----												
	FY 2016	Q1	Q2	Q3	Q4	FY 2017	Q1	Q2	Q3	Q4	FY 2018	Q1 2019
1 Payroll / Health & Welfare												
NYCT	\$ (4,415)	\$ (1,059)	\$ (1,200)	\$ (1,105)	\$ (1,262)	\$ (4,625)	\$ (1,111)	\$ (1,265)	\$ (1,098)	\$ (1,293)	\$ (4,767)	\$ (1,150)
LIRR	(707)	(178)	(182)	(196)	(197)	(753)	(194)	(199)	(200)	(250)	(843)	(205)
MNR	(668)	(167)	(167)	(174)	(175)	(683)	(177)	(175)	(167)	(194)	(714)	(179)
MTA HQ	(302)	(76)	(77)	(68)	(81)	(302)	(80)	(73)	(83)	(101)	(337)	(76)
MTA Bus	(346)	(85)	(76)	(98)	(86)	(345)	(92)	(81)	(111)	(90)	(373)	(109)
SIRTOA	(37)	(7)	(8)	(9)	(9)	(33)	(8)	(8)	(7)	(8)	(30)	(8)
	(6,475)	(1,571)	(1,710)	(1,650)	(1,808)	(6,740)	(1,662)	(1,801)	(1,666)	(1,936)	(7,064)	(1,727)
Pension / Other Fringe Benefits												
NYCT	(1,475)	(353)	(371)	(358)	(374)	(1,456)	(364)	(378)	(372)	(379)	(1,492)	(371)
LIRR	(323)	(87)	(90)	(87)	(78)	(342)	(91)	(93)	(91)	(75)	(350)	(91)
MNR	(245)	(63)	(64)	(65)	(62)	(254)	(67)	(67)	(63)	(56)	(253)	(71)
MTA HQ	(94)	(20)	(20)	(16)	(30)	(86)	(18)	(19)	(20)	(46)	(102)	(19)
MTA Bus	(92)	(20)	(28)	(30)	(25)	(103)	(25)	(24)	(26)	(36)	(112)	(31)
SIRTOA	(11)	(2)	(3)	(3)	(3)	(12)	(3)	(3)	(3)	(4)	(12)	(3)
	(2,240)	(546)	(575)	(560)	(572)	(2,253)	(567)	(582)	(574)	(598)	(2,321)	(586)
Overtime												
NYCT	(617)	(169)	(176)	(204)	(227)	(776)	(212)	(224)	(236)	(227)	(899)	(215)
LIRR	(160)	(41)	(41)	(44)	(50)	(176)	(51)	(56)	(56)	(53)	(216)	(49)
MNR	(113)	(29)	(28)	(29)	(29)	(116)	(30)	(30)	(32)	(33)	(126)	(32)
MTA HQ	(19)	(5)	(5)	(8)	(10)	(27)	(10)	(9)	(7)	(5)	(32)	(5)
MTA Bus	(59)	(17)	(15)	(17)	(17)	(66)	(17)	(18)	(19)	(21)	(75)	(20)
SIRTOA	(3)	(1)	(1)	(1)	(1)	(4)	(1)	(1)	(1)	(1)	(4)	(1)
	(972)	(262)	(267)	(303)	(333)	(1,166)	(323)	(338)	(351)	(339)	(1,351)	(321)
OPEB Current Payments												
NYCT	(429)	(116)	(96)	(109)	(102)	(423)	(115)	(122)	(122)	(95)	(453)	(123)
LIRR	(54)	(15)	(15)	(15)	(15)	(60)	(16)	(16)	(15)	(19)	(66)	(16)
MNR	(30)	(8)	(8)	(8)	(8)	(33)	(9)	(9)	(7)	(11)	(36)	(10)
MTA HQ	(17)	(5)	(2)	(5)	(1)	(13)	(1)	(1)	(2)	(16)	(21)	(1)
MTA Bus	(22)	(6)	(6)	(5)	(6)	(22)	(6)	(5)	(6)	(6)	(24)	(5)
SIRTOA	(2)	(0)	(0)	(0)	(0)	(1)	(0)	(0)	(0)	(0)	(1)	(0)
	(554)	(150)	(128)	(143)	(132)	(553)	(147)	(154)	(153)	(147)	(601)	(155)
Total Labor Expense	(10,240)	(2,529)	(2,680)	(2,657)	(2,845)	(10,711)	(2,699)	(2,874)	(2,744)	(3,020)	(11,337)	(2,789)

Source: MTA financial data, documents, and interviews

1 Line items further detailed in subsequent page

Quarterly Labor Expenses by Type (page 2 of 2)

The MTA's annual payroll expense represented ~ 38% to 40% of its total operating expenses between 2016 and 2018

\$M

-----2017-----						-----2018-----						
	FY 2016	Q1	Q2	Q3	Q4	FY 2017	Q1	Q2	Q3	Q4	FY 2018	Q1 2019
Payroll												
NYCT	\$ (3,586)	\$ (852)	\$ (1,001)	\$ (852)	\$ (1,034)	\$ (3,739)	\$ (880)	\$ (1,052)	\$ (879)	\$ (1,068)	\$ (3,878)	\$ (921)
LIRR	(601)	(148)	(149)	(165)	(165)	(628)	(161)	(164)	(166)	(178)	(669)	(170)
MNR	(534)	(137)	(136)	(137)	(138)	(548)	(144)	(138)	(141)	(146)	(570)	(146)
MTA HQ	(249)	(63)	(64)	(62)	(70)	(259)	(69)	(60)	(70)	(83)	(282)	(65)
MTA Bus	(285)	(65)	(66)	(77)	(64)	(272)	(73)	(60)	(90)	(80)	(302)	(89)
SIRTOA	(31)	(5)	(7)	(7)	(7)	(26)	(6)	(6)	(5)	(7)	(24)	(6)
	(5,286)	(1,271)	(1,423)	(1,300)	(1,477)	(5,472)	(1,333)	(1,481)	(1,350)	(1,561)	(5,725)	(1,396)
Pension												
NYCT	(1,009)	(241)	(240)	(240)	(242)	(963)	(242)	(242)	(246)	(246)	(975)	(244)
LIRR	(177)	(45)	(45)	(45)	(49)	(183)	(43)	(43)	(43)	(40)	(170)	(43)
MNR	(102)	(26)	(28)	(33)	(37)	(124)	(30)	(29)	(30)	(30)	(119)	(31)
MTA HQ	(64)	(13)	(13)	(12)	(25)	(62)	(11)	(12)	(13)	(37)	(73)	(12)
MTA Bus	(44)	(11)	(13)	(13)	(13)	(51)	(13)	(13)	(14)	(18)	(57)	(14)
SIRTOA	(6)	(2)	(2)	(2)	(3)	(7)	(2)	(2)	(2)	(3)	(8)	(2)
	(1,402)	(338)	(340)	(345)	(368)	(1,391)	(340)	(341)	(347)	(374)	(1,402)	(346)
Health and Welfare												
NYCT	(829)	(207)	(199)	(252)	(228)	(886)	(231)	(213)	(220)	(225)	(889)	(229)
LIRR	(106)	(30)	(32)	(32)	(32)	(125)	(34)	(34)	(34)	(73)	(175)	(35)
MNR	(134)	(30)	(31)	(36)	(36)	(134)	(33)	(37)	(27)	(47)	(144)	(33)
MTA HQ	(53)	(12)	(13)	(6)	(11)	(42)	(11)	(13)	(13)	(18)	(55)	(11)
MTA Bus	(62)	(19)	(10)	(22)	(22)	(73)	(19)	(22)	(20)	(10)	(71)	(20)
SIRTOA	(6)	(2)	(1)	(2)	(2)	(7)	(1)	(1)	(2)	(2)	(6)	(2)
	(1,189)	(300)	(287)	(350)	(331)	(1,268)	(329)	(320)	(315)	(375)	(1,339)	(331)
Other Fringe Benefits												
NYCT	(466)	(112)	(131)	(118)	(132)	(493)	(122)	(136)	(126)	(134)	(517)	(127)
LIRR	(146)	(42)	(45)	(42)	(29)	(158)	(48)	(49)	(48)	(35)	(181)	(48)
MNR	(143)	(37)	(36)	(33)	(25)	(130)	(37)	(37)	(34)	(26)	(134)	(40)
MTA HQ	(30)	(7)	(7)	(4)	(5)	(24)	(6)	(7)	(6)	(9)	(29)	(7)
MTA Bus	(48)	(9)	(15)	(16)	(11)	(52)	(13)	(11)	(12)	(18)	(54)	(17)
SIRTOA	(5)	(1)	(1)	(2)	(1)	(5)	(1)	(1)	(1)	(2)	(4)	(1)
	(838)	(208)	(236)	(215)	(203)	(862)	(227)	(241)	(227)	(224)	(920)	(239)
Totals	(8,715)	(2,117)	(2,285)	(2,210)	(2,380)	(8,993)	(2,229)	(2,383)	(2,240)	(2,534)	(9,385)	(2,313)

Source: MTA financial data, documents, and interviews

Quarterly Non-Labor Expenses by Type (page 1 of 3)

YoY increases to MTA's non-labor expenses are largely driven by Material & Supply purchasing combined with Operating and Professional Service Contracts

\$M

	2017					2018						
	FY 2016	Q1	Q2	Q3	Q4	FY 2017	Q1	Q2	Q3	Q4	FY 2018	Q1 2019
Materials and Supplies												
NYCT	\$ (357)	\$ (96)	\$ (108)	\$ (95)	\$ (98)	\$ (397)	\$ (99)	\$ (106)	\$ (105)	\$ (104)	\$ (413)	\$ (108)
LIRR	(174)	(46)	(57)	(42)	(52)	(197)	(57)	(58)	(62)	(49)	(226)	(50)
MNR	(123)	(27)	(33)	(30)	(33)	(124)	(33)	(38)	(41)	(32)	(144)	(37)
MTA HQ	(0)	(0)	(0)	(0)	(0)	(0)	-	(0)	(0)	(0)	(0)	(0)
MTA Bus	(42)	(12)	(11)	(13)	(12)	(48)	(15)	(10)	(11)	(12)	(47)	(12)
SIRTOA	(2)	(1)	(1)	(1)	(1)	(4)	(1)	(1)	(1)	(1)	(4)	(1)
	(698)	(182)	(211)	(181)	(197)	(770)	(205)	(213)	(219)	(198)	(835)	(207)
1 Contracts & Claims												
NYCT	(907)	(240)	(216)	(238)	(237)	(930)	(247)	(275)	(271)	(290)	(1,084)	(259)
LIRR	(107)	(30)	(29)	(42)	(35)	(136)	(31)	(37)	(33)	(33)	(134)	(50)
MNR	(210)	(39)	(35)	(51)	(83)	(209)	(37)	(45)	(48)	(100)	(230)	(55)
MTA HQ	(217)	(58)	(68)	(67)	(91)	(284)	(70)	(80)	(72)	(125)	(348)	(60)
MTA Bus	(78)	(23)	(17)	(26)	(20)	(86)	(23)	(19)	(28)	(28)	(98)	(25)
SIRTOA	(11)	(5)	(4)	(3)	(4)	(16)	(1)	(3)	(0)	(0)	(5)	(0)
	(1,528)	(395)	(369)	(427)	(469)	(1,660)	(410)	(460)	(453)	(576)	(1,898)	(448)
Electric Power, Fuel, & Insurance												
NYCT	(398)	(128)	(101)	(109)	(99)	(437)	(134)	(123)	(126)	(103)	(486)	(140)
LIRR	(118)	(37)	(27)	(31)	(41)	(135)	(31)	(36)	(37)	(36)	(140)	(30)
MNR	(99)	(29)	(26)	(23)	(38)	(116)	(22)	(34)	(32)	(35)	(123)	(25)
MTA HQ	(12)	(1)	(2)	(2)	(3)	(9)	(1)	(2)	(2)	(3)	(8)	(2)
MTA Bus	(26)	(11)	(6)	(4)	(6)	(26)	(7)	(8)	(8)	(6)	(29)	(6)
SIRTOA	(5)	(2)	(1)	(2)	(1)	(5)	(1)	(1)	(1)	(2)	(6)	(1)
	(658)	(207)	(163)	(171)	(188)	(729)	(195)	(205)	(206)	(186)	(792)	(204)
Other Business Expenses & Adjustments												
NYCT	(81)	(21)	(21)	(22)	(22)	(86)	(23)	(23)	(24)	(22)	(93)	(23)
LIRR	(34)	(9)	(9)	(9)	(10)	(37)	(9)	(9)	(4)	(10)	(33)	(10)
MNR	(55)	(8)	(12)	(15)	(12)	(47)	(11)	(10)	(11)	(10)	(42)	(8)
MTA HQ	(101)	(25)	(10)	(22)	(12)	(69)	(19)	(22)	(18)	(19)	(79)	(17)
MTA Bus	(4)	(1)	(1)	(1)	(1)	(3)	(1)	(1)	(1)	(1)	(4)	(1)
SIRTOA	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	(275)	(63)	(53)	(69)	(57)	(242)	(62)	(66)	(59)	(63)	(250)	(59)
Total Non-Labor Expense	(3,159)	(847)	(796)	(848)	(910)	(3,401)	(872)	(943)	(937)	(1,023)	(3,776)	(919)

Source: MTA financial data, documents, and interviews

1 Line items further detailed in subsequent pages

Quarterly Non-Labor Expenses by Type (page 2 of 3)

Itemized break down of contracts and claims, which had second largest increase of all operating expenses in 2018 compared to 2017

\$M

	-----2017-----					-----2018-----						
	FY 2016	Q1	Q2	Q3	Q4	FY 2017	Q1	Q2	Q3	Q4	FY 2018	Q1 2019
Other Operating												
Contracts												
NYCT	(259)	(61)	(60)	(65)	(87)	(273)	(57)	(86)	(73)	(78)	(295)	(69)
LIRR	(80)	(22)	(23)	(32)	(26)	(103)	(20)	(29)	(24)	(21)	(95)	(38)
MNR	(135)	(28)	(24)	(37)	(50)	(139)	(29)	(29)	(38)	(50)	(146)	(38)
MTA HQ	(64)	(18)	(17)	(18)	(19)	(71)	(17)	(19)	(18)	(22)	(76)	(19)
MTA Bus	(27)	(5)	(6)	(7)	(8)	(27)	(11)	(9)	(9)	(10)	(39)	(10)
SIRTOA	(10)	(5)	(3)	(3)	(4)	(14)	(1)	(3)	(0)	(0)	(4)	(0)
	(575)	(139)	(133)	(162)	(194)	(628)	(135)	(175)	(162)	(182)	(654)	(174)
Professional Services												
Contracts												
NYCT	(149)	(51)	(39)	(49)	(24)	(164)	(53)	(48)	(44)	(57)	(202)	(41)
LIRR	(24)	(8)	(6)	(8)	(8)	(30)	(10)	(5)	(10)	(11)	(36)	(12)
MNR	(58)	(6)	(11)	(9)	(32)	(57)	(8)	(11)	(9)	(37)	(64)	(12)
MTA HQ	(149)	(40)	(51)	(49)	(72)	(212)	(50)	(61)	(54)	(103)	(269)	(41)
MTA Bus	(23)	(7)	(3)	(6)	(5)	(22)	(5)	(7)	(12)	(8)	(32)	(5)
SIRTOA	(1)	(0)	(0)	(1)	(0)	(1)	(0)	(0)	(0)	(0)	(0)	(0)
	(403)	(113)	(111)	(121)	(141)	(485)	(126)	(132)	(130)	(216)	(604)	(111)
Paratransit Service												
Contracts												
NYCT	(379)	(99)	(94)	(97)	(101)	(390)	(103)	(104)	(120)	(123)	(450)	(117)
LIRR	-	-	-	-	-	-	-	-	-	-	-	-
MNR	-	-	-	-	-	-	-	-	-	-	-	-
MTA HQ	-	-	-	-	-	-	-	-	-	-	-	-
MTA Bus	-	-	-	-	-	-	-	-	-	-	-	-
SIRTOA	-	-	-	-	-	-	-	-	-	-	-	-
	(379)	(99)	(94)	(97)	(101)	(390)	(103)	(104)	(120)	(123)	(450)	(117)
Claims												
NYCT	(119)	(29)	(23)	(27)	(25)	(103)	(35)	(38)	(34)	(31)	(137)	(31)
LIRR	(3)	(0)	(1)	(1)	(0)	(3)	(1)	(2)	1	(0)	(3)	(0)
MNR	(16)	(5)	(0)	(6)	(1)	(13)	(0)	(6)	(1)	(13)	(19)	(5)
MTA HQ	(4)	(0)	(0)	(0)	(0)	(1)	(3)	(0)	(0)	(0)	(3)	(0)
MTA Bus	(28)	(10)	(7)	(13)	(6)	(37)	(6)	(4)	(7)	(10)	(27)	(9)
SIRTOA	(0)	(0)	(0)	-	-	(0)	(0)	-	(0)	(0)	(0)	(0)
	(171)	(45)	(32)	(47)	(33)	(157)	(45)	(49)	(41)	(54)	(189)	(47)
Totals	(1,528)	(395)	(369)	(427)	(469)	(1,660)	(410)	(460)	(453)	(576)	(1,898)	(448)

Source: MTA financial data, documents, and interviews

Quarterly Non-Labor Expenses by Type (page 3 of 3)

MTA's insurance expense decreased by ~ 20% from 2017 to 2018, which represents the largest reduction in any operating expense category for the periods compared

\$M

	-----2017-----					-----2018-----						
	FY 2016	Q1	Q2	Q3	Q4	FY 2017	Q1	Q2	Q3	Q4	FY 2018	Q1 2019
Electric Power												
NYCT	(250)	(70)	(64)	(72)	(67)	(273)	(76)	(72)	(82)	(75)	(304)	(83)
LIRR	(79)	(21)	(20)	(20)	(25)	(86)	(19)	(21)	(29)	(22)	(91)	(19)
MNR	(65)	(15)	(16)	(16)	(22)	(70)	(15)	(23)	(22)	(20)	(79)	(20)
MTA HQ	(5)	(1)	(1)	(1)	(2)	(6)	(1)	(2)	(1)	(3)	(6)	(1)
MTA Bus	(2)	(0)	(0)	(0)	(0)	(2)	(0)	(0)	(1)	(0)	(2)	(0)
SIRTOA	(4)	(1)	(1)	(1)	(1)	(4)	(1)	(1)	(1)	(1)	(5)	(1)
	(405)	(108)	(104)	(111)	(118)	(440)	(113)	(119)	(135)	(121)	(488)	(125)
Other Business Expenses & Adjustments												
NYCT	(81)	(21)	(21)	(22)	(22)	(86)	(23)	(23)	(24)	(22)	(93)	(23)
LIRR	(34)	(9)	(9)	(9)	(10)	(37)	(9)	(9)	(4)	(10)	(33)	(10)
MNR	(55)	(8)	(12)	(15)	(12)	(47)	(11)	(10)	(11)	(10)	(42)	(8)
MTA HQ	(101)	(25)	(10)	(22)	(12)	(69)	(19)	(22)	(18)	(19)	(79)	(17)
MTA Bus	(4)	(1)	(1)	(1)	(1)	(3)	(1)	(1)	(1)	(1)	(4)	(1)
SIRTOA	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	(275)	(63)	(53)	(69)	(57)	(242)	(62)	(66)	(59)	(63)	(250)	(59)
Fuel												
NYCT	(77)	(24)	(23)	(20)	(23)	(89)	(27)	(30)	(29)	(28)	(115)	(30)
LIRR	(14)	(4)	(4)	(3)	(6)	(17)	(6)	(5)	(5)	(5)	(21)	(5)
MNR	(13)	(4)	(4)	(4)	(4)	(16)	(7)	(5)	(5)	(6)	(23)	(5)
MTA HQ	(1)	(0)	(0)	(0)	(0)	(1)	(0)	(0)	(0)	(0)	(1)	(0)
MTA Bus	(15)	(5)	(5)	(4)	(5)	(19)	(6)	(8)	(7)	(6)	(27)	(6)
SIRTOA	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	(120)	(37)	(36)	(30)	(39)	(142)	(47)	(48)	(46)	(46)	(187)	(47)
Insurance												
NYCT	(71)	(34)	(14)	(18)	(9)	(75)	(30)	(22)	(16)	-	(67)	(27)
LIRR	(25)	(12)	(3)	(8)	(9)	(32)	(5)	(10)	(4)	(9)	(28)	(6)
MNR	(20)	(9)	(6)	(3)	(12)	(30)	(0)	(6)	(5)	(9)	(21)	0
MTA HQ	(6)	(1)	(1)	(0)	(1)	(2)	(0)	(0)	(0)	(0)	(1)	(0)
MTA Bus	(9)	(5)	-	-	-	(5)	-	-	-	-	-	-
SIRTOA	(1)	(1)	-	(1)	(0)	(2)	-	-	-	(1)	(1)	(0)
	(133)	(61)	(23)	(30)	(31)	(146)	(35)	(38)	(25)	(19)	(117)	(33)
Totals	(933)	(270)	(216)	(240)	(244)	(970)	(258)	(270)	(265)	(249)	(1,043)	(263)

Source: MTA financial data, documents, and interviews

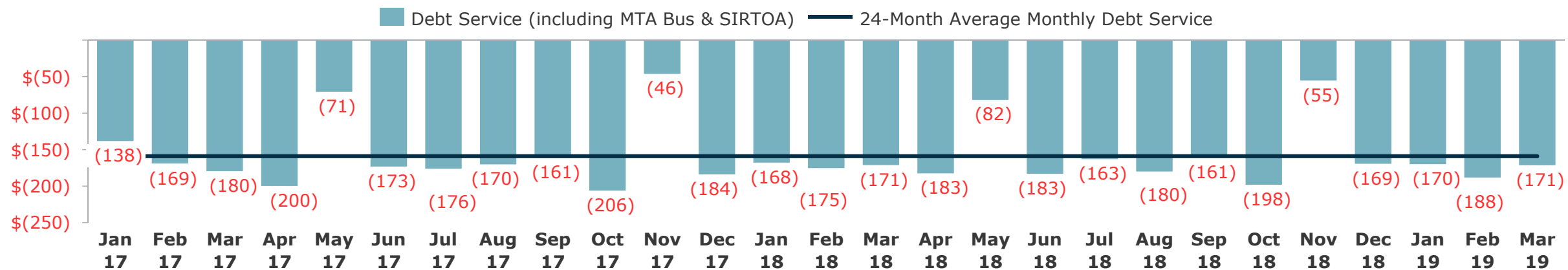
Quarterly Debt Service Expenses

Debt servicing expense is largely consistent throughout the year; amounts here do not include B & T debt service¹
During May and November the expense is substantially reduced due to a recurring "Build America Bond Credit"

\$M

	-----2017-----					-----2018-----						
	FY 2016	Q1	Q2	Q3	Q4	FY 2017	Q1	Q2	Q3	Q4	FY 2018	Q1 2019
Debt Service Expenses												
Non-TBTA NYCT/CRR/COPs	\$ (1,793)	\$ (487)	\$ (438)	\$ (502)	\$ (431)	\$ (1,858)	\$ (512)	\$ (444)	\$ (502)	\$ (420)	\$ (1,878)	\$ (527)
MTA Bus	-	-	(5)	(6)	(4)	(15)	(2)	(3)	(2)	(3)	(10)	(3)
SIRTOA	-	-	(0)	(0)	(0)	(1)	(0)	(0)	(0)	(0)	(1)	(0)
Totals	(1,793)	(487)	(444)	(508)	(435)	(1,873)	(514)	(448)	(504)	(423)	(1,889)	(529)

Monthly Debt Service Expense Compared to 24-Month Average¹



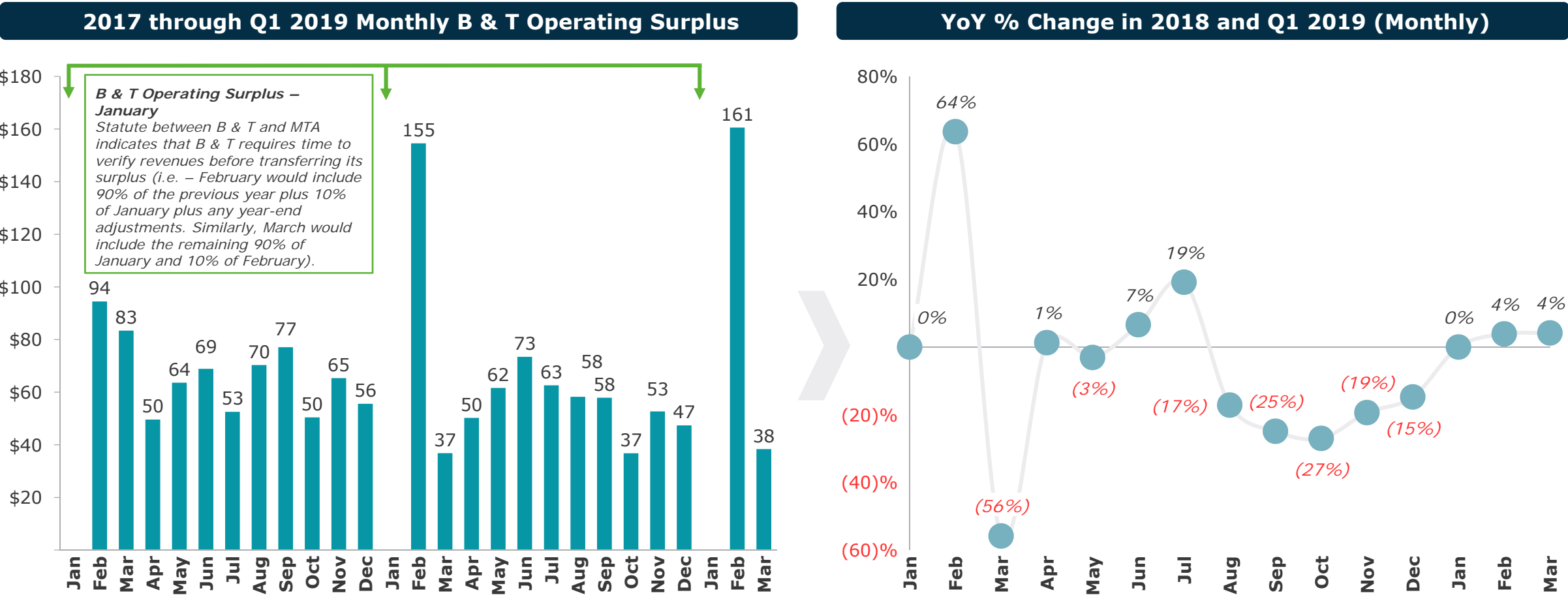
^[1] B & T debt service is netted out from B & T revenue before the calculation of the Inter-Agency Subsidy.

Source: MTA financial data, documents, and interviews

MTA Bridges and Tunnels Inter-Agency Subsidy Transactions

Bridges and Tunnels (“B & T”) operating surpluses in 2017 and 2018 contributed approximately \$731M and \$692M, respectively, to the MTA’s annual subsidies; the B & T operating surplus accounts for 100% of the Inter-Agency Subsidy¹

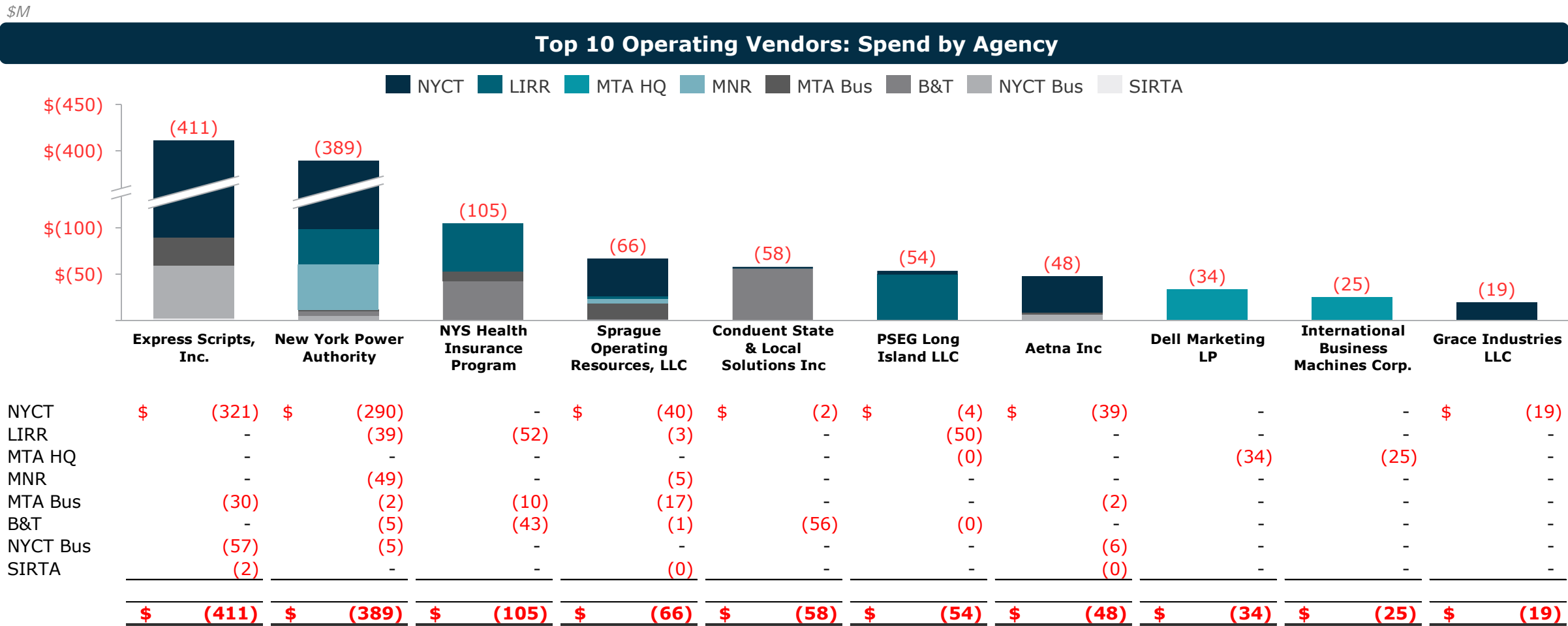
\$M



^[1] B & T operating surplus includes Revenue net of Operating Expenses, Unrestricted Capital Liquidity, and Debt Service.
Source: MTA financial data, documents, and interviews

MTA’s Top 10 Operating Vendors by Spend in 2018

The single highest paid vendor in 2018 among the 8,386 vendors in the accounts payable records was Express Scripts, Inc.¹





Section 5: Review of Fraud, Waste, Abuse or Conflicts of Interest

July 31, 2019

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Fraud, Waste, Abuse, or Conflicts of Interest Overview

- In recent years, instances of fraud, waste, abuse, and potential for conflicts of interest at the MTA have been uncovered by MTA Audit Services (“Audit Services,” aka, the Office of Auditor General, “OAG”), MTA Internal Controls, and the Office of the Inspector General (“OIG”).
- However, the MTA is a wide ranging organization with over 70,000 employees in five Agencies¹ and headquarters covering every neighborhood across the five boroughs of New York City and a significant portion of Long Island, Westchester County, and Connecticut.
- Due to a variety of factors, including geography, its history, its evolution, and work rules, the MTA of 2019 is a **decentralized organization**.
- For these reasons, preventing all forms of fraud, waste, abuse, or conflicts of interest is currently extremely difficult.
- During this review we have observed elements, including New York City Transit vendor management, informal coordination between Audit Services and the OIG, and compliance’s risk library plan, that, especially if formalized and expanded, increase the effectiveness of the MTA’s risk management.
- However, every organization can improve its internal controls and risk management. The MTA has clear opportunities to enhance the prevention of fraud, waste, and abuse through key improvements, some of which require systemic changes, while others can be implemented within the current framework.
- Preventive measures to address potential conflicts of interest include proper vendor management and employee compliance.
- The overall compliance culture of this organization is driven by an abundance of reporting requirements and a **lack of centralized defined roles and responsibilities**.
- In addition, the organizational structure of the Compliance function does not align with the most effective compliance process, as many **resources involved primarily report to their Agencies** rather than directly through the centralized Compliance function.
- Risk management should benefit from the centralization of not only internal controls, but also human resources, finance, and the legal departments.
- This shift should **centralize key elements of information** which should create a more effective monitoring environment.
- Through our review of documents, data and processes, as well as dozens of interviews with employees from Compliance, Legal, Finance, Audit Services, OIG, and Agency operations, we gained an understanding of the current structures, processes and procedures and developed recommendations spanning **structural realignment**, increased **risk based audit focus** and enhanced procedures to ensure **timely, effective implementation of recommendations**.
- Based on our review of documents, including historical Audit Services and OIG reports, and dozens of interviews, we also identified certain high risk areas for review, including overtime risk management, vendor management, and organizational use of data.
- These steps should enable the MTA to more effectively hone in on potential fraud, waste, abuse, and conflicts of interest and design preventative controls.

^[1]Agencies herein to be defined as all the agencies under the Metropolitan Transit Authority, including New York City Transit, Metro-North Railroad, Long Island Rail Road, Bridges and Tunnels, and MTA Bus.

We See Five Foundational Elements for Improving the Effectiveness and Efficiency of the MTA's Risk Management Program

Centralize

- In line with the MTA's proposed reorganization, internal control officers currently reporting into Agencies should report to MTA Headquarters Compliance ("MTA HQ Compliance")
- Centralized structure should align differences in internal control procedures between the Agencies

Simplify

- A strong and collaborative Enterprise Risk Management committee designed to focus the efforts of the employees throughout the organization who work directly on controls and compliance
- Continued and enhanced coordination across Audit Services, Internal Controls, and the OIG should improve efficiency and effectiveness

Standardize

- Centralized internal controls should facilitate the implementation of standard policies and procedures across the Agencies
- The new Governance, Risk, & Compliance ("GRC2") system, RSA Archer, should be used to consolidate policies, findings, and assessments

Plan & Monitor

- More robust risk assessment / weighting process should allow for better selection of audit topics
- Key sources of data, including HR and Finance reports with data from across the Agencies, should be reviewed by Audit Services and Compliance on a monthly basis to better monitor and identify areas of risk closer to real-time

Empower

- Internal control officers embedded in the Agencies, but reporting directly to MTA HQ Compliance, should be empowered to report more openly beyond the Agency-level
- More comprehensive recommendation follow-up should help ensure Audit / Internal Controls / OIG recommendations are implemented and effective

Four Key Takeaways from the Review

1

Coordination

- The MTA has a large risk management ecosystem, which includes Internal Controls, Audit Services, and the OIG, and interacts with thousands of employees and hundreds of departments
- **In order to ensure coordination, the MTA should create a committee, or expand an existing committee, to coordinate risk management across the organization**

2

Reactive vs Proactive Monitoring

- The organization reacts to high visibility issues, which are often driven by adverse media coverage - however, this firefighting approach often leads to the diversion of resources away from other high risk areas
- **MTA should build out its existing controls, maintain a centralized approach to risk management, and develop tools to help proactively identify and monitor high risk areas**

3

Recommendation Implementation

- Implementation of the recommendations from the OAG and OIG and corrective actions from Internal Controls are inconsistent and not always properly confirmed or retested
- **The recommendations of Audit Services and OIG should be risk categorized and those considered top priority need to be verified via follow-up reviews over multiple years**

4

Data Analytics

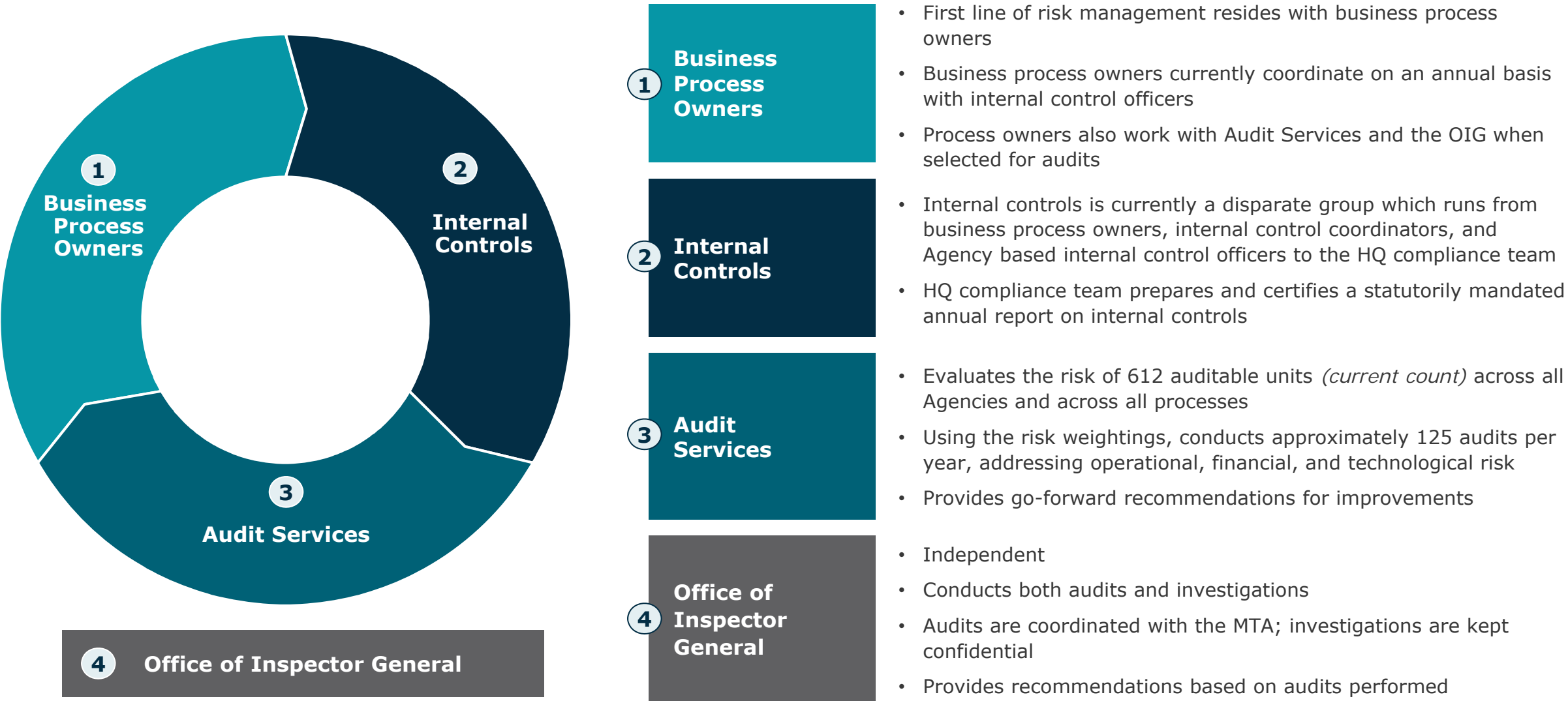
- Timecard analyses are extremely difficult from an organization wide point of view. Financial analyses are impeded by inconsistent use of the elements in the general ledger string
- **The use of data is crucial to improving the risk management landscape - the consolidation should bring together Human Resources and financial data to allow for insightful data analytics, such as monthly financial and workforce trend analyses**



Risk Management Overview

Observations and Key Takeaways

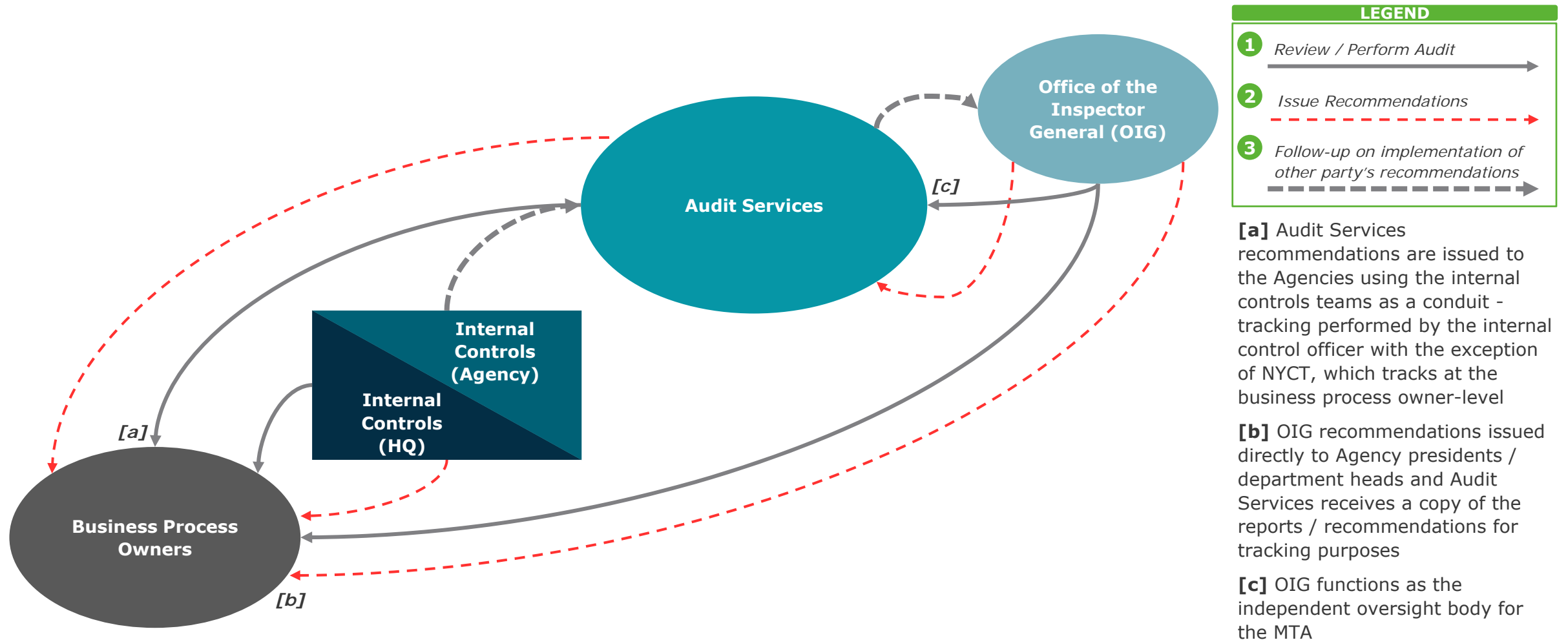
MTA Risk Management Involves Three Internal Groups and the OIG



Source: MTA documents and interviews

MTA Risk Management Function: How Recommendations are Issued and Remediated

The MTA receives, tracks, and addresses recommendations issued by Audit Services, Internal Controls, and the OIG



Source: MTA documents and interviews

MTA Risk Management Function: How Recommendations are Issued and Remediated

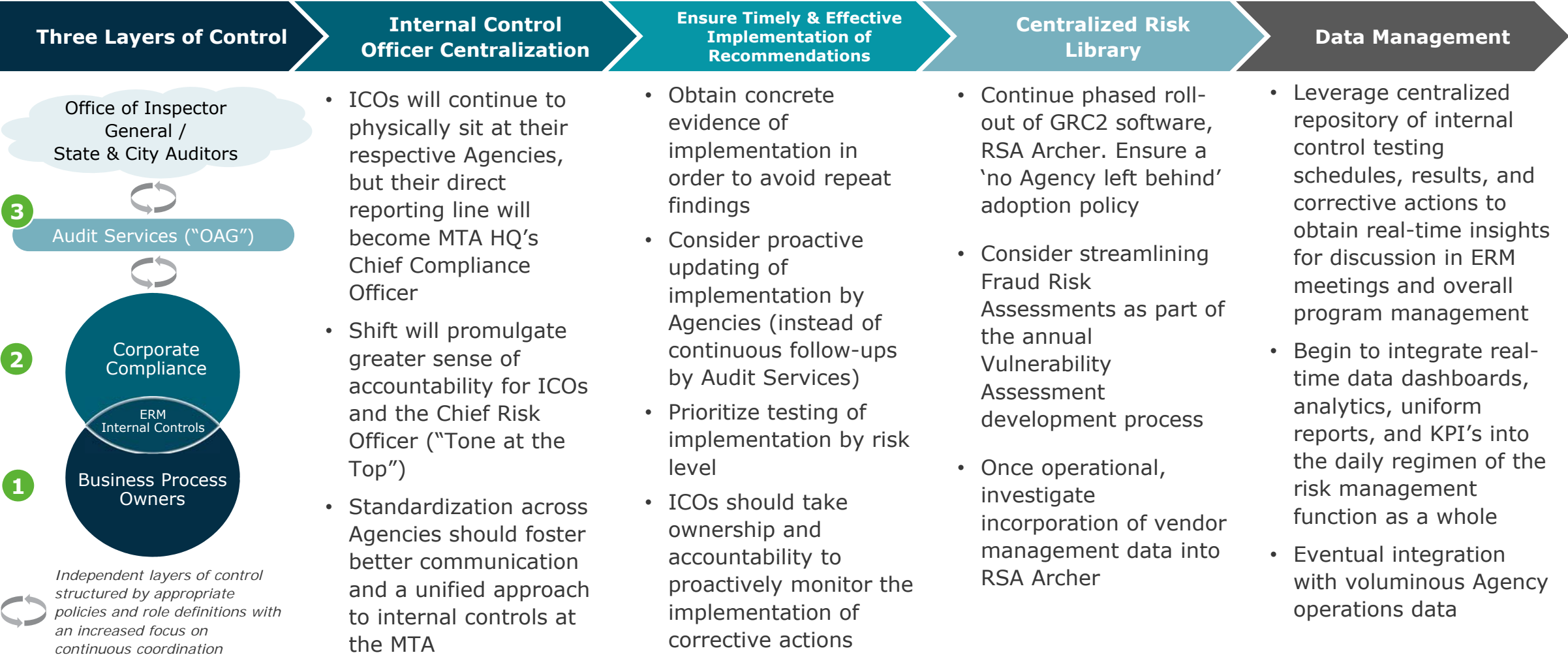
The MTA receives, tracks, and corrects recommendations issued by Audit Services, Internal Controls, and OIG

		RECOMMENDATIONS ISSUED BY:		
		Audit Services	Internal Controls / Enterprise Risk Management ("ERM")	Office of the Inspector General
ENTITY RESPONSIBLE FOR:	TRACKING	Internal Control Officers ("ICO") Receive implementation status updates from Business Process Owners, which are communicated to Audit Services and discussed at Enterprise Risk Management Committee meetings	Internal Control Officers Required to aggregate control test results and recommendations stemming from material weaknesses / significant deficiencies for inclusion in Annual Internal Control Summary Report	Audit Services Legally mandated to provide quarterly implementation status reports to OIG for recommendations issued in a calendar year. Self reported by Agency without documentation or validation by OAG
	IMPLEMENTING	Internal Control Managers / Coordinators^[1] Responsible for overseeing implementation of Audit Services' recommendations and communicating status updates to Internal Control Officers. Generally requires collaboration with Business Process Owners	Business Process Owners Responsible for executing corrective actions stemming from internal control test failures performed by the Internal Control Managers / Coordinators	Business Process Owners Communicate implementation updates to Audit Services for inclusion in quarterly status report provided to OIG
	SUBSEQUENT TESTING	Audit Services Subjectively select 10 key audits annually to follow-up on implementation status directly with Agency liaison	Chief Compliance (Risk) Officer & Agency Internal Control Officers Agencies generally taken at their word for implemented corrective actions. Follow-up only occurs when a known issue from ERM meetings does not make its way into the Annual Internal Control Summary Report	Office of the Inspector General Deputy Inspector General has autonomy to follow-up on recommendation status of any OIG report directly with Agency based on experiential judgement and priority within the OIG. May request OAG to perform follow-up audits

^[1] Recommendations greater than 6 months past due are required to be reported by the Chief Compliance Officer at the quarterly Audit Committee meetings
Source: MTA documents and interviews

Future State of Risk Management at the MTA

Recommended changes should help to bolster the risk management infrastructure that MTA already has in place



Source: MTA documents and interviews
PLEASE SEE DISCLAIMER ON PAGE 101

Key Takeaways on Risk Management's Recommendations

1

Record Keeping

- The full "lifecycle" of recommendations should document evidence supporting implementation and should be centrally maintained and directly uploaded by a responsible party in GRC2
- This "one step" approach should create efficiencies by eliminating multiple hand-offs/data entry and allow for contemporaneous review of whether implementation met the recommendations

2

Risk Prioritization

- The MTA should develop and implement a formalized risk weighting methodology using financial and operational risk parameters based on recommendations from the OIG and Audit Services
- The OIG recommendations and related risk weighting should be incorporated and considered during the overall audit planning process as well the internal control vulnerability assessment

3

Implementation

- Accountability for implementation of those recommendations receiving the highest risk rating should be certified, and re-certified, by Agency presidents, supported by sub-certifications, and have reporting deadlines
- Need to embed implementation in the policies and procedures of the relevant department so that the benefit of the recommendation endures through changes in personnel

4

Follow-up

- The highest risk recommendations should be confirmed via follow-up audits / reviews. For others, concrete evidence, including but not limited to documentation, updated policies, desktop procedures and walkthrough testing, must be obtained in order to avoid repeat issues
- Recommendations should only be considered implemented when complete and no longer in process



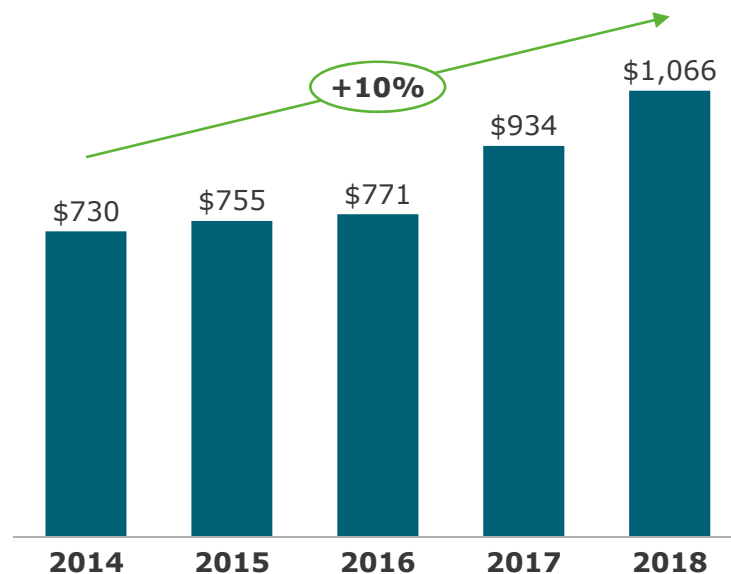
Overtime Risk Management

Observations and Key Takeaways

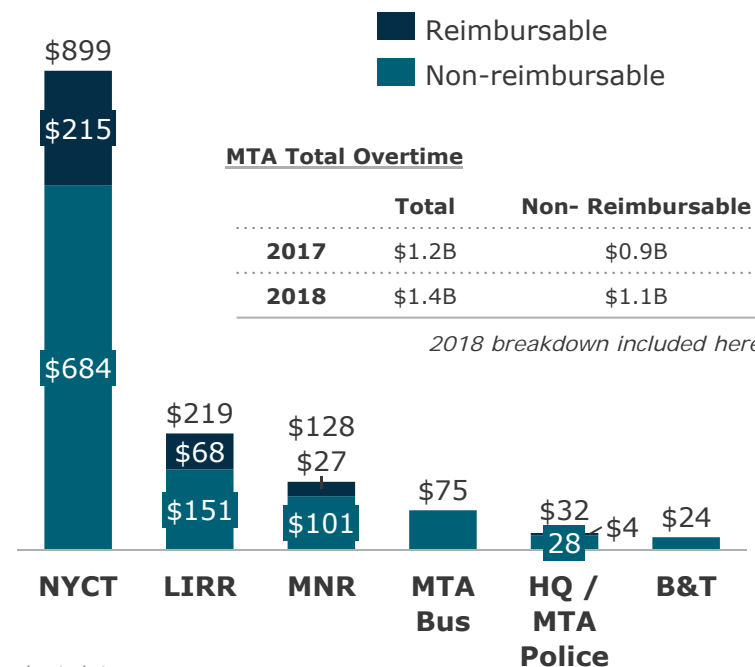
MTA Wide Overtime in 2018 was Approximately \$1.4B, \$0.3B of which was reimbursable

- The increases in overtime in recent years are attributable, in part, to ongoing infrastructure improvements and emergencies, and also appear to be partly attributable to inefficient scheduling and collectively bargained work rules
- The increases have created the opportunity for waste, and, in at least a few recent instances identified by the OIG, fraud or abuse

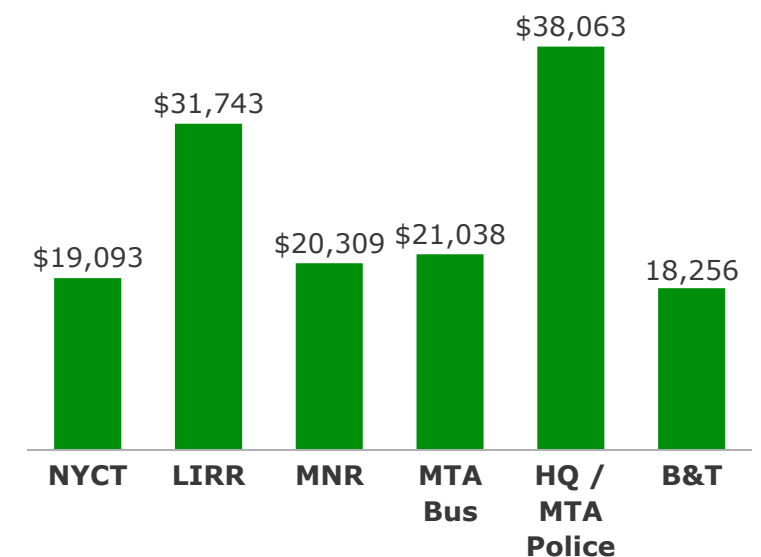
Last Five Years of Non-Reimbursable Overtime (\$M)



Overtime by Agency (\$M)



Average Overtime per Non-Administrative Employee in Operating Functions (real dollars)



Source: Hyperion financial data, PeopleSoft general ledger data, and MTA budget data

Select Examples of Fraudulent Time Reporting by MTA Employees

Combatting the abuse of time reporting is a top priority for the MTA. Audit Services and the OIG have identified instances of fraudulent time reporting in recent years. A select few OIG findings are detailed below:

Abuse of Time by LIRR Building & Bridges Foreman¹

OIG Findings: LIRR building and bridges foreman failed to remain on duty for his full tours on at least 10 separate dates and 16 work tours, in violation of LIRR Policy #LEAVE-001. Additionally, he submitted falsified Labor Sheets to LIRR on multiple dates, which allowed him to receive payment for hours he did not work.

OIG Recommendations: LIRR to discipline the employee up to and including termination. LIRR to take steps to account for his actual work hours and recoup any wrongly made payment.

Agency Resolution: Employee issued a notice of trial on August 24, 2018. Union requested two postponements on his behalf, which were granted, as that is established practice. On October 1, 2018, the employee retired from the LIRR.

[1] Title of OIG report is "Abuse of Time by Track Foreman"

Source: MTA & MTA/OIG #2018-48

Abuse of Time and Property by Metro-North Vehicle Operator

OIG Findings: Individual abused time by performing personal errands during his MNR tour and misused an MNR vehicle by sleeping in the vehicle during his work tour. Individual also took MNR property without obtaining permission. MNR lacks policies to address potential safety issues created by motor vehicle operators driving for extended hours.

OIG Recommendations: Individual should be disciplined up to and including termination. MNR should implement internal controls for overtime approval and usage for motor vehicles operators.

Agency Resolution: Individual suspended for a period of 61 days and agreed to pay restitution (\$300). The Department re-instructed line supervisors and timekeeping administrators to better monitor overtime. Approval for overtime of Class A2 Vehicles assigned to Manager -level or higher.

Source: MTA & MTA/OIG #2018-07

Abuse of Time and Outside Activities by NYCT Assistant Chief Officer

OIG Findings: On at least 8 occasions, NYCT Assistant Chief Officer was absent from duty without proper authority and submitted inaccurate Time and Attendance Reports while engaging in outside activity as a volunteer firefighter. NYCT's current policy lacks clarity regarding dual employment and outside activities. Further, individual violated MTA's Code of Ethics by failing to obtain permission prior to engaging in outside activity as a volunteer firefighter.

OIG Recommendations: NYCT should impose discipline on individual up to and including termination. NYCT should update its dual employment and outside activity policies.

Agency Resolution: Employee suspended without pay and demoted to his civil service title of Station Supervisor with a 48% reduction in salary. NYCT moved for dismissal, but the arbitration board ruled against dismissal.

Source: MTA & MTA/OIG #2017-10

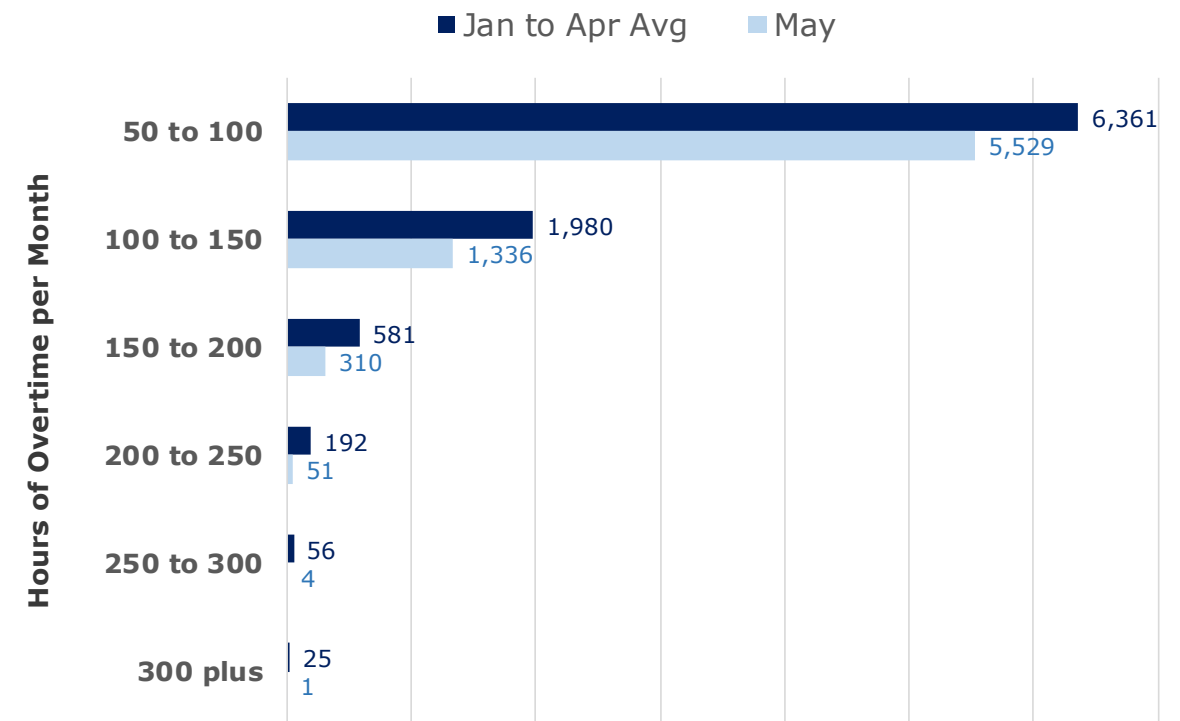
An Analysis of Organization Wide Timecard Data for the First Five Months of 2019 Revealed General Trends but also Exposed Issues with the Data

Issues Encountered

- Timecard data lacks a reliable “date worked” field
 - The date fields are used inconsistently across Agencies and even within Agencies
- The best available date filter was payroll period, which is subject to the differences across Agencies and unions
- The timecard data contains over 200 “Earnings Codes”
- Only a portion of the Earnings Codes relates to actual time worked; the remainder are codes used for various other reasons
- In addition, nearly one-third of the Earnings Codes have a multiplier that must be applied to the hours to arrive at the basis for hourly rate payments
- The project codes attached to the time data are not easily mapped
- In general, the lack of standardized time entry systems at the MTA makes an organization-wide analysis difficult

Average number of employees within the stated ranges of overtime hours per month

Monthly overtime hours



The data from May indicates a reduction in the number of employees with over 50 hours of overtime

Sources: MTA interviews, AlixPartners analysis of 2019 timecard data provided by the Business Service Center

Key Takeaways on Overtime Risk Management

1

Management of Scheduled Overtime

- Increased demand for labor is often misaligned with workforce due to challenges with project scheduling / staffing methodologies / work rules
- Hierarchical hours allotment introduces safety and public perception risks
- Inconsistent treatment with respect to staffing, timekeeping, labor union relationships, etc.

2

Enforce Compliance

- Compliance issues with overtime wastes resources and leads to cultural issues and systemic abuse
- Managers should be empowered to efficiently handle overtime and push back to the maximum extent of relevant work rules

3

Leverage Newly Implemented System

- The newly implemented biometric clocks should not only help compliance but also provide valuable data
- The data should be maintained in a central and secure environment and be made available, with legitimate reason, to the various members of the risk management ecosystem

4

Consolidated Data and Reporting

- The organization needs to leverage the Kronos implementation and consolidate its timecard data in a manner which allows for standardized reporting
- Inconsistent timekeeping tools across Agencies and projects; paper time cards hinder end-to-end standardization; also present a compliance risk

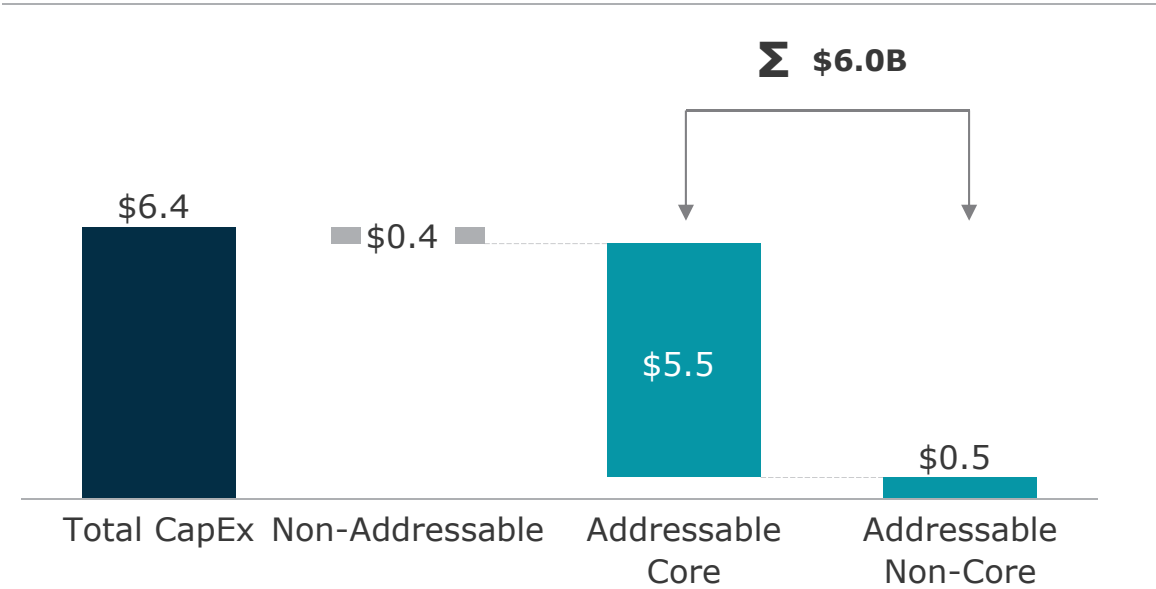


Vendor Management

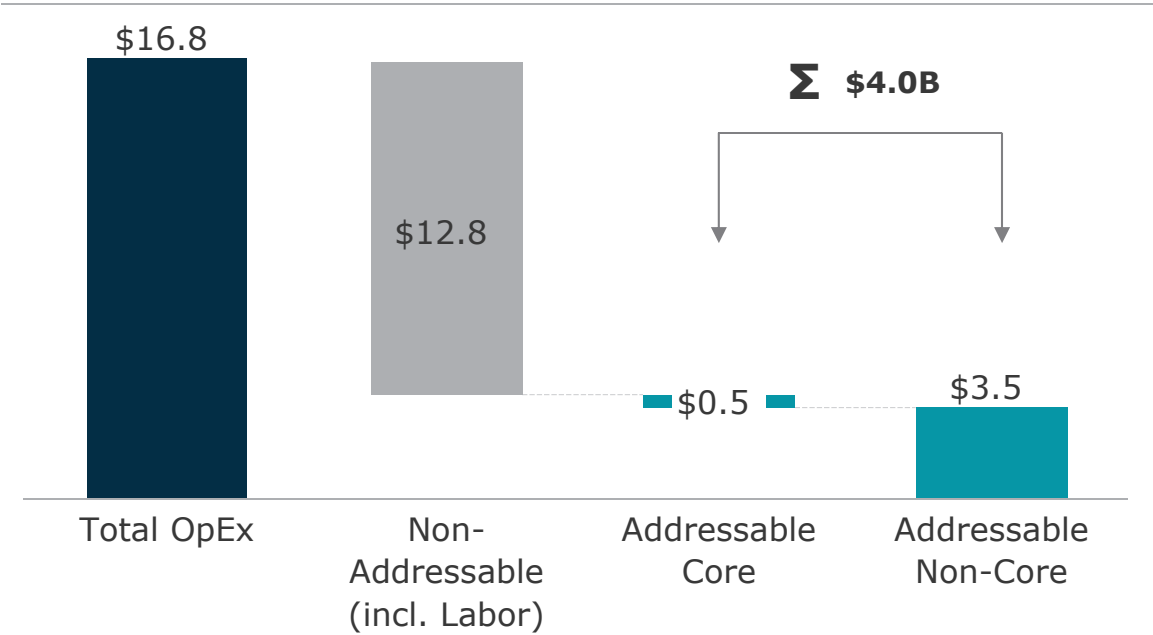
Observations and Key Takeaways

The MTA had ~\$10B of Addressable Non-Labor Spend in 2018 (43% of Total Spend) and Vendor Management is Crucial to Realizing Appropriate Value from this Spend

Capital expenses



Operating expenses



Addressable spend	Capex	Opex	Total
Core	\$5.5	\$0.5	\$6.0
Non-core	\$0.5	\$3.5	\$4.0
Total	\$6.0	\$4.0	\$10.0

Core spend includes the spend directly related to operating the revenue-generating assets

Non-core includes the administrative and other non-operating spend

In addition to the financial importance, vendor management is crucial to managing risk

Sources: MTA Census, MTA 2018 Financial Reports, MTA interviews, AlixPartners analysis

Instances of Procurement Related Fraud, Waste, Abuse, and Conflicts of Interest

MTA's Office of the Inspector General has investigated procurement practices across the MTA. Three examples of findings from investigations are summarized below:

Improper Disclosure of Cost Estimates by an NYCT Consultant

OIG Findings: NYCT has an indefinite quantities contract with a staffing consultant to supply cost estimators to NYCT's Capital Program Management Estimating Unit. An individual from the staffing consultancy transmitted confidential cost estimates to his personal email. The individual also transmitted confidential project design drawings to his son and his employer's office manager.

OIG Recommendations: NYCT should inform the individual's employer that he is not to work on any MTA related projects in any capacity. NYCT should ensure that all estimating consulting firms reinforce NYCT's policies surrounding confidentiality.

Agency Resolution: NYCT confirmed that the individual's services at NYCT had been terminated and his employer was informed that he should no longer be put forth as a candidate for any MTA projects. NYCT also confirmed that it held one-on-one discussions with all relevant personnel about the handling of confidential information.

Source: MTA & MTA/OIG #2018-36

Business Service Center Procurement Consultant Services Contracts

OIG Findings: BSC Procurement was both the user and procurer of KPMG's consulting service for 2 specific contracts. Therefore, the Chief Procurement Officer was in the position to request and authorize modifications to his own contracts without additional scrutiny if the change did not exceed \$750,000.

OIG Recommendations: When BSC Procurement is both the user of a service and the procurer of the related contract, and a proposed modification to the contract would increase its value substantially, the MTA Chief Financial Officer must approve the change. A report to the Board should be made on an annual basis on how the money was spent, on what projects, and to which consulting firms. Funds committed for "as-needed consulting services contracts" should be reviewed by the Auditor General semi-annually.

Agency Resolution: Directive issued by Chief Procurement Officer to all Procurement staff. A report on utilization of "As Needed" Consulting Contracts was included in the Finance Committee Book. Utilization report will be published annually. As-needed consulting services contract audits included in the 2018 Audit Plan.

Source: MTA & MTA/OIG #2017-06

Ethics Violation by LIRR Assistant Chief Program Officer - Infrastructure

OIG Findings: LIRR Assistant Chief Program Officer had an improper relationship with management of a consulting firm that contracted with LIRR. The individual disseminated confidential cost estimates during the pre-award procurement stage, failed to notify LIRR's Ethics Officer of his relationship with individuals in the consulting firm, circumvented subordinate staff in communicating with the consulting firm, and accepted gifts (MLB game tickets) from his relationship at the consulting firm.

OIG Recommendations: LIRR should impose discipline on the individual up to and including termination. The individual should be recused from all matters involving the consulting firm in which he has a relationship. LIRR should address MTA Code of Ethics violations by the consulting firm's representative.

Agency Resolution: LIRR Assistant Chief Program Officer resigned upon issuance of report in lieu of termination and the consulting firm's representative timely completed the vendor ethics training program.

Source: MTA & MTA/OIG #2017-02 and LIRR

Vendor Management is Crucial to Mitigating Risk and Realizing Value from Vendor Spend

Observed Structure and Processes

- Inconsistency across the Agencies on vendor on-boarding rigor
- The NYCT vendor management system is considered to be the best across the organization
- Background checks are performed on winning bidders; sometimes final two options
- Subcontractors must self-attest to adherence to MTA policies; attestations are only requested in limited circumstances

Use of ACE System

- The ACE System is a vendor management database which evaluates the performance of prime vendors engaged in capital contracts of \$250K or more
- Vendor performance grades are on a three point scale; satisfactory, marginal, unsatisfactory. Areas considered include safety, quality, scheduling, management, diversity program goals, and overall performance
- Grades less than the highest result in extra work for the grader, creating an incentive to give out the highest grades; in certain markets with limited vendors there is a possible further incentive to not provide low grades

Subcontractors

- Prime contractors are responsible for overseeing Subcontractors including delivery of MTA code of ethics
- Only those Subcontractors with contracts over a certain dollar threshold or high risk areas are subject to background checks
- MTA does have the ability to call in a Subcontractor, along with the Prime contractors, to a hearing
- The MTA does not evaluate subcontractor performance. It is believed that approximately half of the work performed by vendors is done by subcontractors

Source: MTA documents and interviews

MTA Vendor Management: Establishing Subcontractor Relationships

Subcontractor compliance is historically the responsibility of the prime contractors. Instances of Disadvantaged Business Enterprise Program abuse by subcontractors have been found in recent years

Scheme To Fraudulently Claim Credit For Work Performed By A Minority Owned Business

Findings of Investigation: A nationwide construction and public works company that is publicly traded on the New York Stock Exchange served as the prime contractor on the Project after being awarded the prime contract for the job by the MTA, a contract for which they were ultimately paid approximately \$222M. The contract required compliance with the Disadvantaged Business Enterprise Program (the DBE program). Pursuant to that program, as the prime contractor, they were obligated to make good faith efforts to subcontract a specified percentage of work on the prime contract to certain disadvantaged business enterprises (DBE companies). The Prime, certain other non-DBE companies (the actual companies), and a DBE company that acted solely as a front company in connection with the Project (the front company) conspired to arrange the following scheme to avoid compliance with the DBE program: (a) the front company would be awarded a subcontract worth approximately \$22M, to perform certain construction work on the Project; (b) the actual companies would perform the specified work, but payroll would be “run through” the front company, with paperwork arranged to make it appear as if the front company was performing the specified work; and (c) the Prime would pay the front company a \$500,000 “DBE fee,” although the front company would not perform a “commercially useful function” on the specified work, as required by state and federal regulations.

Subcontractor Abuse of Disadvantaged Business Participation On Federal Projects¹

Findings of Investigation: Three New York-area painting contractors fraudulently obtained payments on two federally funded projects in New York City by lying about compliance with Disadvantaged Business Enterprise (“DBE”) rules, which require participation of businesses owned by women or minorities. Specifically, the defendants made it appear that one of three contractors, a certified disadvantaged business enterprise, was executing millions of dollars of steel painting work at the Brooklyn Bridge and the Queens Plaza transit line when in fact much of the work was performed by another of the three contractors, a non-DBE. In return for being included in the projects, the non-DBE contractor paid kickbacks to the DBE contractor in the form of a \$10,000 “commission payment” and a free trip to Atlantic City. By repeatedly submitting false statements to the New York City Department of Transportation (“NYC-DOT”) mischaracterizing the DBE contractor’s work at these projects, the defendants received millions of dollars in federal funds to which they were not entitled.

Source: US Attorney’s Office, Southern District of New York

[1] Although the incident described herein was not on an MTA project, the OIG was involved in the investigation because the subcontractors had previously performed work on MTA projects.

Key Takeaways on Vendor Management

1

Enhance Use of Vendor Databases

- Centralizing procurement should allow vendor data from the various agencies to be consolidated
- Grades entered into vendor evaluation systems need to be more accurate and better developed. Two recommendations to make this happen: (1) Project managers should be empowered to grade out vendors in a transparent way without being burdened with unreasonable paperwork (2) Project managers must take ownership of the process to provide meaningful feedback

2

Subcontractors

- MTA should evaluate structuring its contracts with prime contractors in a manner which allows it to strengthen controls and visibility over subcontractors (e.g., direct certifications and performance evaluations)
- Subcontractors have to attest to existing relations with MTA, NY State and City; this information should be queried to review vendor’s prior relationships before new or extended work

3

Savings

- Empower procurement to drive Agencies into reasonable solutions that fit the organization’s overall needs for standardization and cost savings
- Use the MTA’s buying power to enter into contracts on the best available terms; and in exchange, cut red tape to reduce vendors’ administrative costs

4

Process Development

- Current best practices in the procurement departments rely too heavily on key individuals
- Processes, policies, and desktop procedures need to be defined and implemented to avoid succession related setbacks

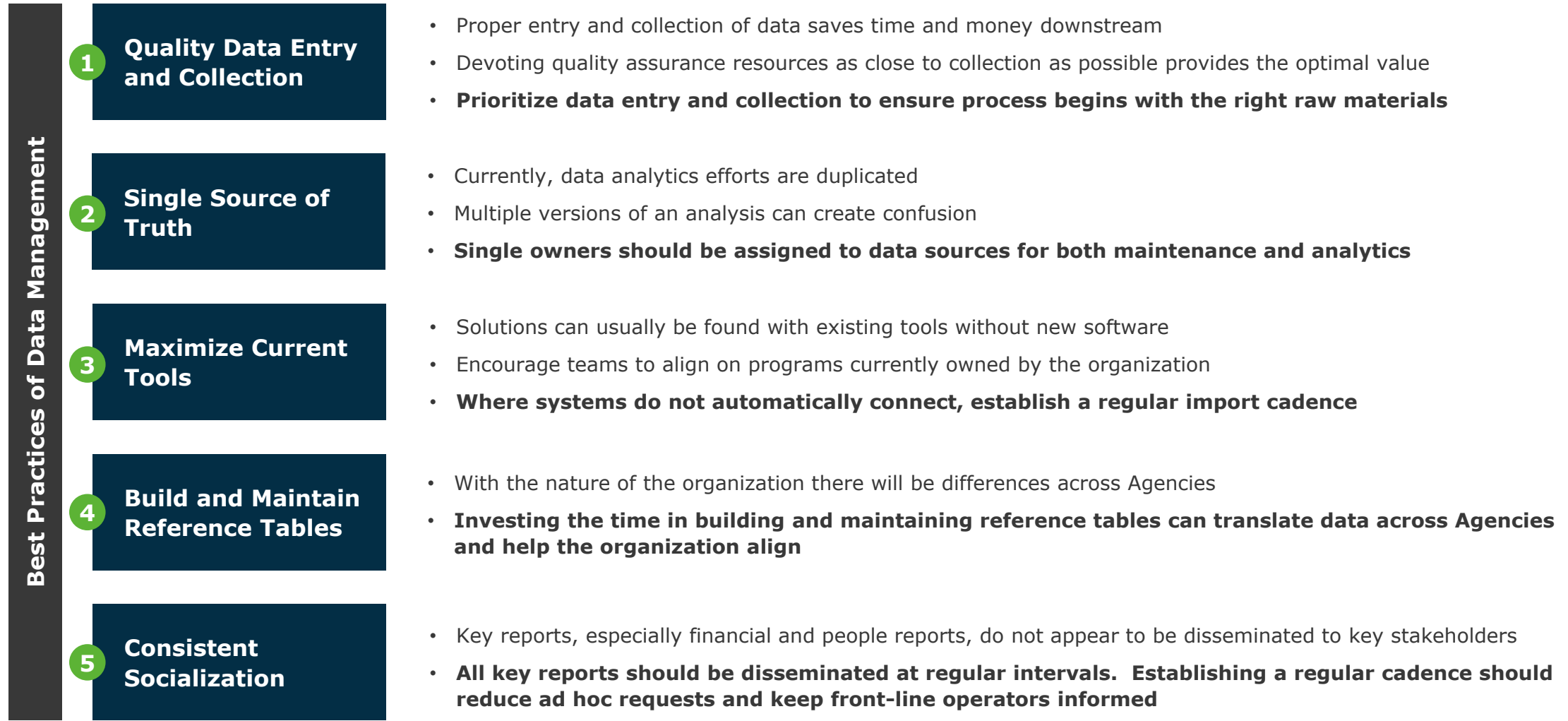


Organizational Use of Data

Observations and Key Takeaways

Data Management: Ongoing Monitoring and Cross-Agency Report Standardization

Perpetual key performance indicator (“KPI”) monitoring and the incorporation of standardized cross-Agency reports should assist the MTA in better managing risk and eventually, provide deep operational insights



Gathering and Analyzing Data Can Help Limit Potential Employee Benefit Fraud and Abuse

MTA’s Office of the Inspector General follows up on a number of anonymous complaints and management requests involving fraud and abuse of medical benefits across the MTA. Three of their reviews are summarized below:

FMLA Abuse by NYCT Signal Maintainer

OIG Findings: NYCT Signal Maintainer abused provisions of the Family and Medical Leave Act by exceeding the allowable number of leave days by more than 80. Individual also used FMLA leave days after his FMLA approval expired and took FMLA leave for purposes other than caring for his parent.

OIG Recommendations: NYCT should discipline individual as deemed appropriate, up to and including termination.

Agency Resolution: Employee dismissed following his arbitration hearing.

Source: MTA & MTA/OIG #2018-38

Unauthorized Dual Employment and FMLA Abuse by NYCT Train Operator

OIG Findings: NYCT Train Operator improperly used FMLA and paid sick leave to engage in unauthorized outside employment with Amtrak. Individual resigned from his NYCT train operator role, but was approved for continuous FMLA leave usage prior to his resignation. As such, individual used his FMLA leave and received sick pay from NYCT while training at Amtrak without express authorization from NYCT.

OIG Recommendations: NYCT should append the OIG’s report and findings to individual’s permanent file and take further action as it deems appropriate.

Agency Resolution: NYCT added OIG’s report to the individual’s permanent file. Additionally, NYCT Law Department sent certified letter to the individual requesting repayment of all unwarranted payments (totaling \$22,473). Currently, NYCT Law Department and the individual are negotiating an acceptable payment installment plan.

Source: MTA & MTA/OIG #2015-27

Benefit Cost Increase

Chronology of Events: In line with other government agencies, the MTA had issues with increasing costs related to certain medical benefits in 2016. The MTA saw an increase in the monthly expense early in its relationship with a new benefit management organization.

Impediments to Correction: While the issue was identified at the NYCT-level, the issue was not raised outside of the Agency until months later. Further, the work rules were perceived to prevent a more robust approval process from being implemented.

Proposed Resolution: The review of standard financial reports would have enabled Audit Services and therefore MTA HQ to be alerted to the spike in benefit cost on a more timely basis.

Source: Discussions with Audit Services and OIG Staff

Key Takeaways on the MTA's Use of Data

1

Difficult to Control What is Not Measured

- Our recent review has found that multiple elements of key financial and operational data are not tracked across the enterprise, managed by a single source, or stored in an accessible location
- Such elements include: master asset database (including material design, date installed, and current condition), human resource roster with reporting lines, and location / occupancy data

2

Timecard Data Cannot be Readily Consolidated

- Our analysis of the organization wide timecard data from the BSC encountered the limitations in the consolidated data
- Date fields are used in different ways across Agencies
- Over 200 earnings codes must be decoded to begin to analyze the data

3

Financial Reports

- Audit Services should receive a detailed monthly download of financial results and develop a standard process to quickly analyze the data
- The resulting output would be a trend analysis that could guide future reviews and prevent financial risk from metastasizing

4

Opportunity for Quick Improvements

- Portions of the recommended data improvements would require organization wide changes, but certain portions can be implemented quickly
- Financial and HR trend analyses should be reported out monthly - financial data could be shared in its current form with an understanding that the functionality will improve over time and HR data can be substantially improved in a quick timeframe by centralizing data management



Conflicts of Interest

Observations and Key Takeaways

Instances of Conflicts of Interest Investigated by the Office of the Inspector General

MTA’s Office of the Inspector General follows up on a number of anonymous complaints and management requests involving conflicts of interest within the MTA. Two of their closed investigations are summarized below:

NYCT Management of Confidential Capital Cost Estimates

OIG Findings: A review was conducted of NYCT Estimating’s policies and practices regarding the confidentiality of cost estimates. It found that the primary procedural guidelines pertaining to the preparation of cost estimates did not include any guidance regarding confidentiality. Estimator correspondence indicated that 5 consultants and 9 employees sent confidential estimates to their personal email during the review period.

OIG Recommendations: NYCT policies should include a requirement that all parties involved in the estimating process sign a confidentiality agreement. They should also include a notice in the confidentiality agreement that estimators who violate the terms could be disciplined up to and including termination. Estimators should be provided with laptops configured to disallow data transfers to/from external devices.

Agency Resolution: Key NYCT policies updated to reflect OIG guidance and confidentiality agreement was updated to include a statement about discipline. 32 configured laptops were issued to the Cost Estimating group.

Source: MTA & MTA/OIG #2018-47

Failure to Disclose Conflict of Interest by LIRR Chief Program Officer

OIG Findings: LIRR Chief Program Officer improperly provided preferential treatment to an LIRR contractor that employs his son. Individual failed to seek an appropriate waiver to MTA’s All Agency Code of Ethics. On at least 4 occasions, he failed to comply with the disclosure requirements of LIRR’s confidentiality statement. He also failed to recuse himself in writing on 4 of the contracts between LIRR and the contractor.

OIG Recommendations: LIRR should consider disciplining the individual as deemed appropriate and administer additional ethics training to the individual. LIRR should enact a formal recusal policy and communicate its recusal procedures to all of its employees.

Agency Resolution: LIRR's Chief of Staff advised that the employee has been reprimanded and retrained. LIRR follows the All-Agency Code of Ethics which governs recusals based upon conflicts of interest and, therefore, does not have its own policy or forms. Also, the MTA issued an article on the MTA Today homepage that discussed the Anti-Nepotism policy and the need for recusal.

Source: MTA & MTA/OIG #2016-05

Key Takeaways on Conflicts of Interest

1

Vendor Conflicts of Interest

- Ensure Agency policies are appropriately updated to reflect findings from the OIG including associated disciplinary measures for policy violations
- Consider developing a monthly or quarterly report across agencies to identify and monitor changes to vendor conflict disclosures and associated recusals by MTA employees

2

Nepotism

- Ensure timely completion of annual nepotism attestations and related party questions
- Evaluate feasibility of extending the anti-nepotism policy certification to represented employees
- Synchronize disclosures and HR data

3

Dual Employment

- Ensure timely completion of outside business activity disclosures
- Leverage prior cases of dual employment investigated by the OIG to determine if public databases exist for outside activities that MTA employees are most likely engaged in. Deploy analytics to link names from public databases with MTA roster and incorporate disclosure data to identify individuals that may not be in compliance

4

Dotted Line Reporting Issues

- Through consolidation of the Internal Control function the issue of having ICOs with responsibilities to both their agencies and the MTA central compliance should be avoided
- In turn, the escalation of identified issues would no longer face an “Agency vs. Corporate Compliance” ceiling (i.e. – streamlined flow of information)



Audit Services

Observations and Key Takeaways

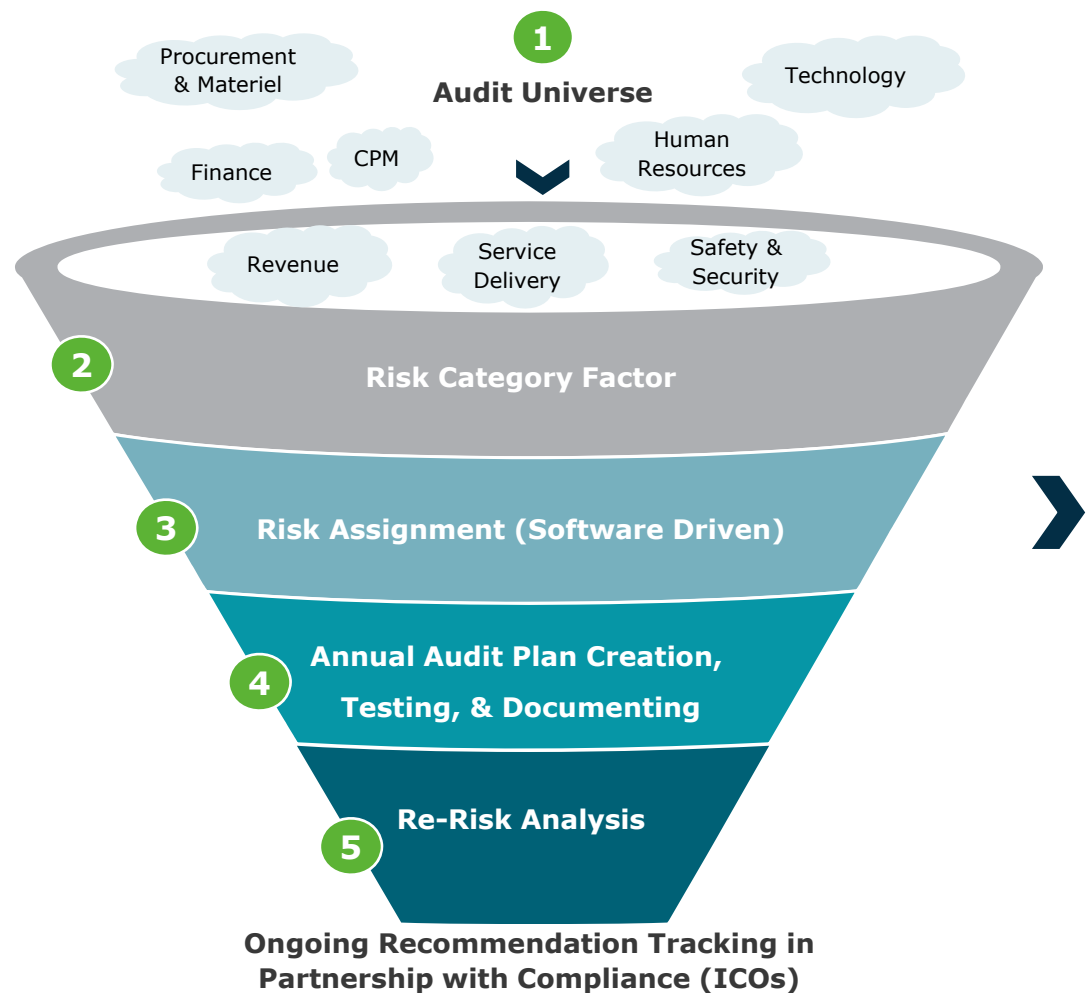
Introduction to Audit Services

- The Audit Services consists of approximately 74 people and performs an enterprise-wide, independent risk assessment, develops an annual audit plan, issues and tracks recommendations, and liaises with external auditors, corporate compliance, and the audit committee.
 - Audit Services resides in the MTA HQ and conducts the internal audits for the entire organization, including the Agencies.
- In order to plan its annual audits the OAG first organizes the totality of the MTA into approximately 600 auditable units and then weighs the risk associated with each auditable unit (Risk Weighting Methodology). The risk weighting information is used to inform the audit selection, but subjectivity is also a factor in determining the final annual audit plan.
- Over the past three years the OAG has conducted approximately 145 – 170 assurance audits per year.
 - From these audits, an average of over 500 recommendations are made annually.
 - The voluminous annual audit plan makes it difficult for audit services staff to dig deeper in key areas while ensuring timely completion of all scheduled audits in a given year.
 - The tracking of the implementation status for these recommendations is largely left to the ICO currently residing in each Agency. Recommendation statuses are then communicated to Audit Services by the ICO for inclusion in Audit Services' tracking database.
 - The one notable exception is in the case of the New York City Transit Agency, where the recommendations are tracked by the Internal Control Managers embedded in each operation department.
 - The OAG does not focus its recommendation on cost savings, but rather improved processes from which cost savings may result.
- The OAG audit selection process is informed by the risk weightings, which are developed considering five factors.
 1. Nature of the Operation/ Process
 2. Control Environment
 3. Financial Exposure
 4. Public Perception / Management Interest
 5. Results of Prior Audits
 - The final audit scope determination is subject to the Auditor General's judgement in addition to collaboration with Agency Presidents.
- In addition to conducting internal audits, the OAG also executes certain special projects / audits in collaboration with management and the OIG.

Source: MTA documents and interviews

MTA Audit Services: Auditable Units & Risk Weighting Methodology

Annual Audit Planning Contextualized



Process Details

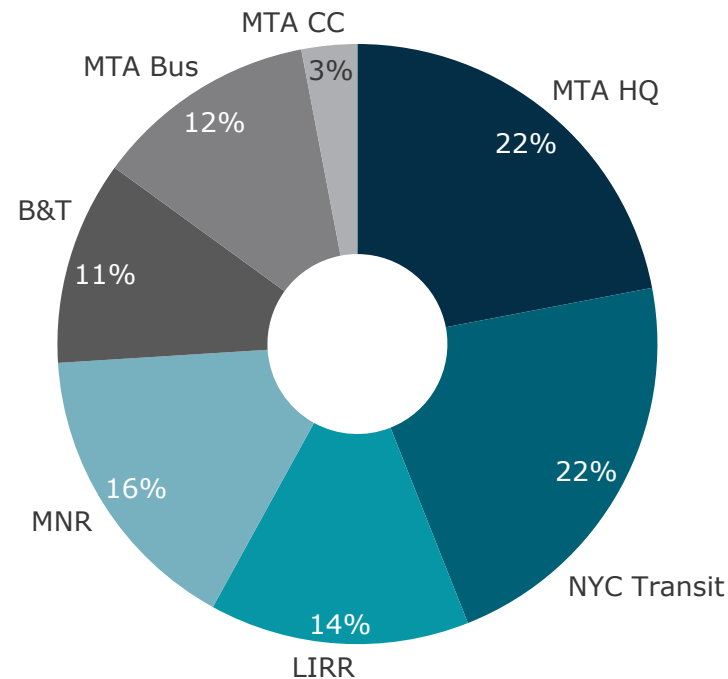
1	The audit universe is based on the major activities carried out to meet the organization’s goals and objectives. List is made of the auditable functions and activities large enough to be exposed to risk if adequate management policies, internal controls, and procedures are absent or not followed.
2	Nature of the Operation/ Process Control Environment Financial Exposure Public Perception / Management Interest Results of Prior Audits
3	HIGH - Risks that expose the Agency to unacceptable financial, operating, and/or legal/regulatory vulnerabilities MEDIUM - Risks that expose the Agency to moderate financial, operating, and/or legal/regulatory vulnerabilities LOW - Risks that expose the Agency to minor financial, operating and/or legal/regulatory vulnerabilities
4	Annually, each auditable assigned risk assessment classification should be reviewed and, as necessary, updated [High, Medium, or Low], and the audit plan then developed. The highest-rated areas are generally selected for inclusion in the audit plan.
5	At the end of each audit / review, Director and In-Charge Auditor will update the risk factors for a business activity based on information gathered during the course of the audit/project. This information is used to define the risk categories for future year audits.

Source: PG01 - Risk Assessment and Audit Coordination.pdf

MTA Audit Services: Resource Allocation and Recommendations

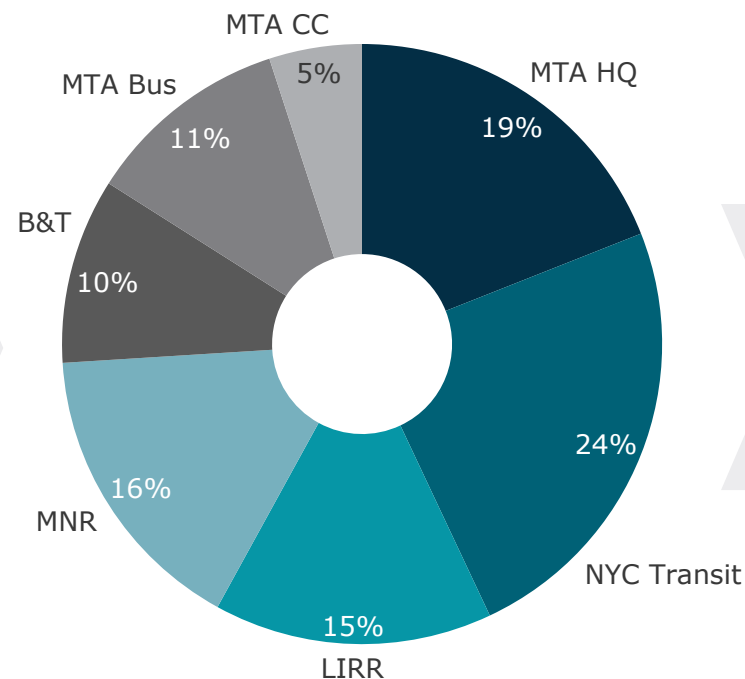
Audit Services includes a staff of 74 with a budgeted capacity of 85 FTE's. Resource allocation is based on estimated hours of each audit scheduled for a given year

2017 Audit Services Hour Allocation



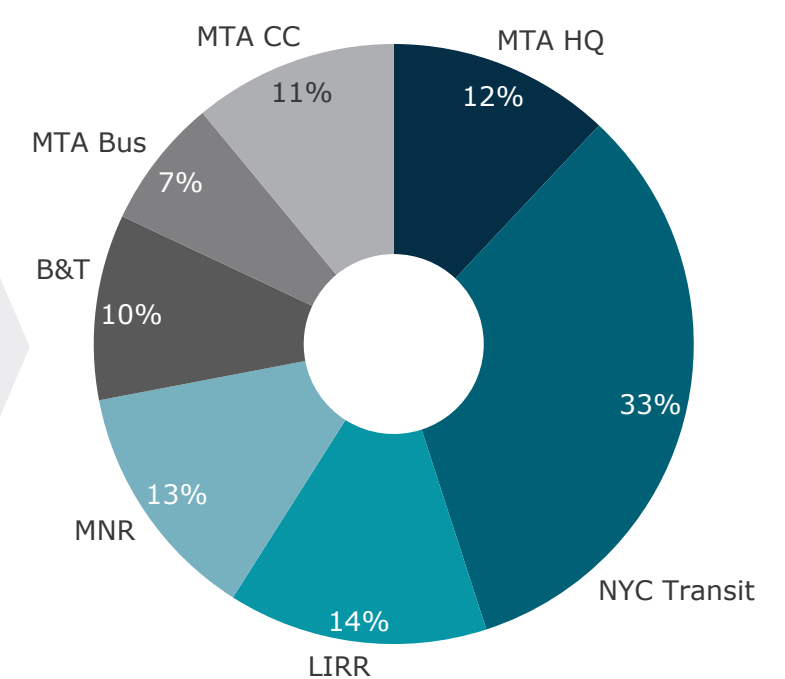
- 295 auditable activities (672 sub-activities), **170 audits planned** (47 low, 120 moderate, 128 high), **607 recommendations issued**

2018 Audit Services Hour Allocation



- 296 auditable activities (672 sub-activities), **165 audits planned** (47 low, 120 moderate, 129 high), **472 recommendations issued**

2019 Audit Services Hour Allocation

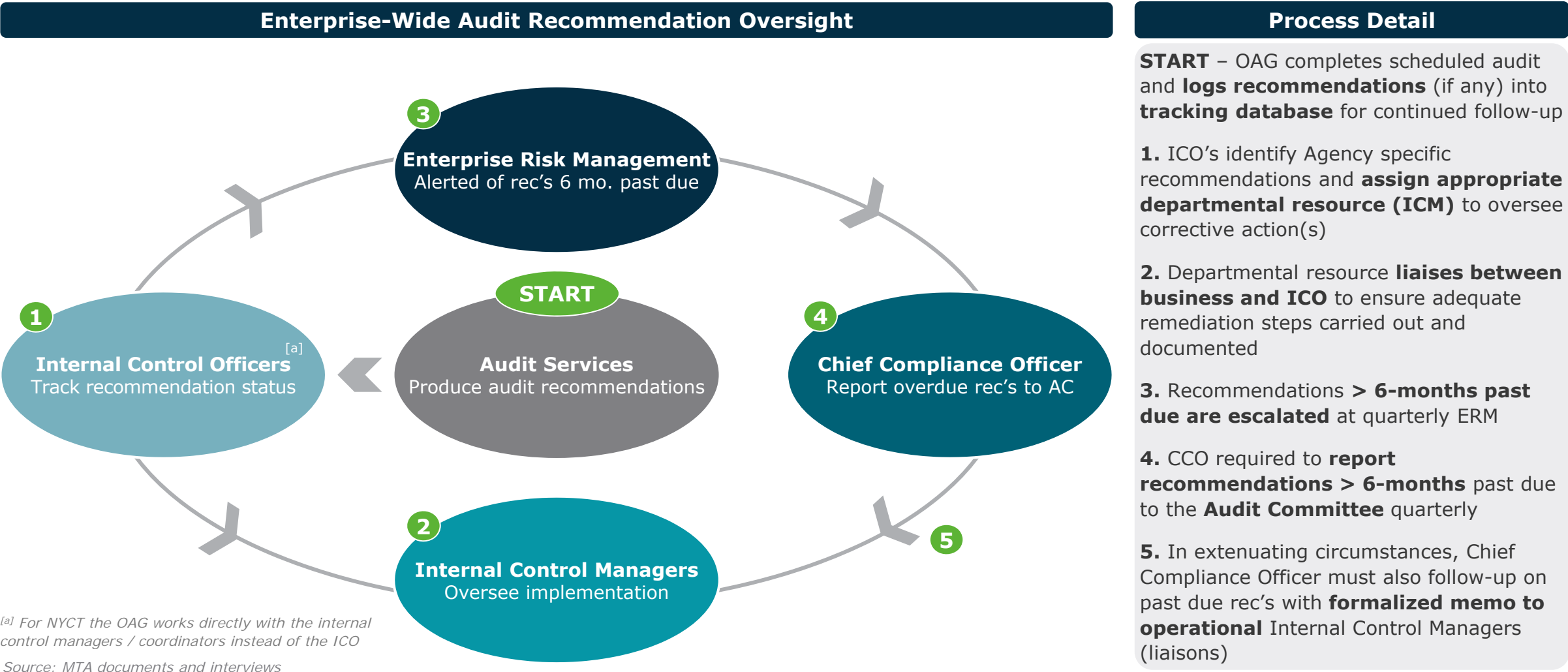


- 612 auditable units, **145 audits planned** (96 low, 253 moderate, 263 high)

Sources: Audit Committee Meeting 1/23/2017, Audit Committee Meeting 2/22/2018, Audit Committee Meeting 1/22/2019, Completed Audit - Assurance Operations Potential Cost Adjustments 12 31 18.xlsx

MTA Audit Services: Recommendation Issuance & Remediation

Audit recommendation process spans across Audit Services, Internal Controls, Business Process Owners, and the Audit Committee



Key Takeaways on Audit Services

1

Risk Assessments & Risk Weighting

- Implement dynamic risk assessment process to address off cycle business changes or other party's report findings that may not coincide with an audit's re-risk analysis or annual risk assessment period
- Challenge the status quo of current risk weighting inputs and understand if they are still in agreement with the MTA leadership's top priorities in light of the enterprise-wide transformation

2

Audit Selection Process

- Establish benchmark KPI's / analytics during initial audit to better ascertain the effectiveness of remediation work when following up on key historical audit findings
- Develop report for the Audit Committee of high risk auditable units that do not fall within an annual audit plan and supplement with date of last audit

3

Employee Rotations

- Consider leaving a set number of positions open for rotating employees
- Having employees rotating into Audit Services from various other departments should have a dual benefit: (1) employees should benefit from increased visibility and the perspective of an audit (2) Audit Services should gain subject matter expertise

4

Recommendation Issuance & Tracking

- Demand more detail in, and an increased frequency of, remediation updates from the Agencies for issued audit recommendations. Clearly define 'implementation' to not include in-process
- More frequent meetings with the internal control program and OIG should further unify MTA's new risk management platform

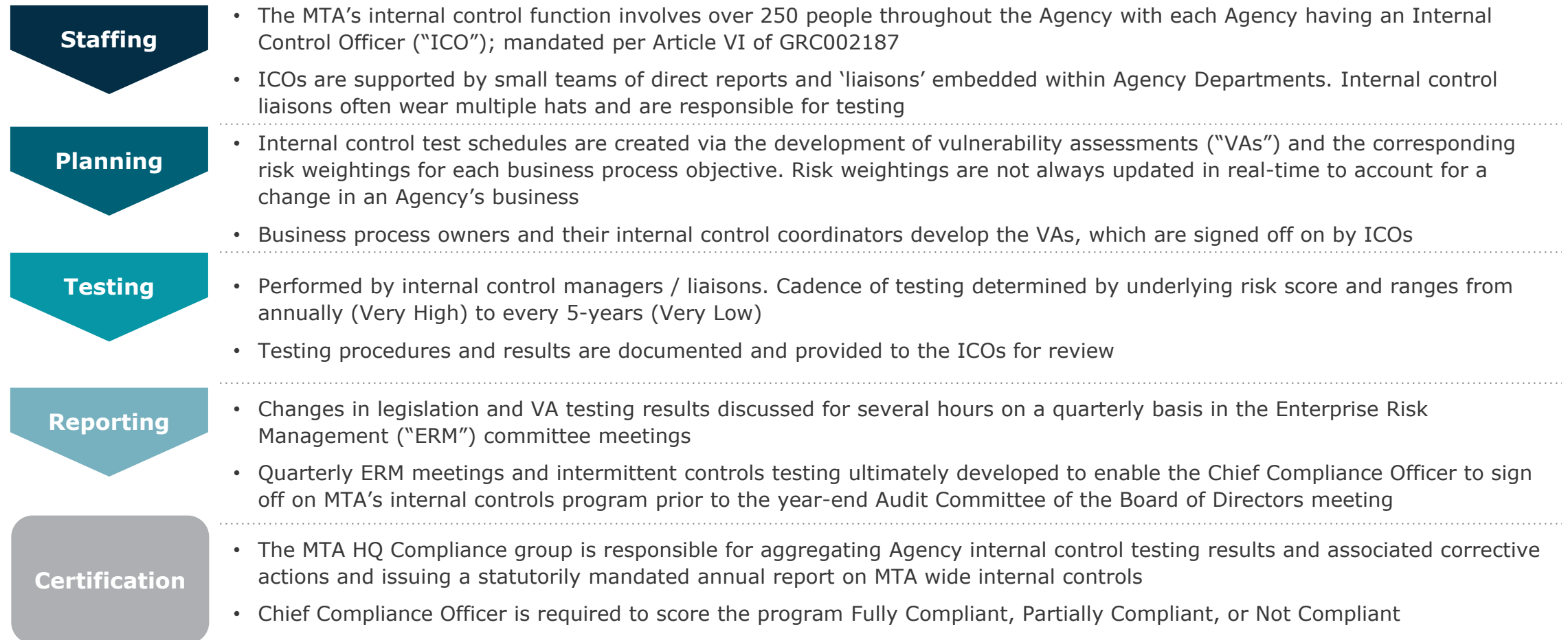


Internal Controls Function

Observations and Key Takeaways

MTA Enterprise Risk Management & Internal Control Programs

Self-assessment and reporting program designed to comply with the requirements of NY State Government Accountability, Audit, and Internal Control Act of 1999 via year-end Audit Committee certification



Sources: ERM agendas, interviews with Chief Compliance Officer, ICOs & managers / coordinators, MTA ERM and Internal Control Guidelines

Enterprise Risk Management (“ERM”) Committee & the Internal Controls Program

ERM committee meetings function as the main channel for MTA HQ’s Chief Compliance / Risk Officer to keep the team apprised of new developments, while also driving progress toward issuing the annual summary report

ERM Committee Overview

- ❑ Convenes quarterly, 1.5 hours per session
- ❑ Currently, the committee is comprised of 22 members:
 - B&T (2)
 - MTA HQ (3)
 - LIRR (4)
 - MNR (3)
 - MTA Bus (3)
 - MTA CC (1)
 - NYCT (6)
- ❑ Meetings chaired by MTA HQ Chief Compliance and Chief Risk Officer
- ❑ Meetings designed to keep Agency internal control teams informed of internal and external policy / procedure changes

2018 – 2019 Sample Meeting Agendas

- ❑ GRC2 status updates (RSA Archer phased implementation)
- ❑ Internal control summary report & certification:
 - Self-assessment review period scheduling
 - Control testing guidelines
 - Agency progress updates
 - Reporting on deficiencies
 - Updated guidance on points of focus
- ❑ Committee of Sponsoring Organizations of the Treadway Commission (“COSO”) suggested fraud risk assessment
- ❑ IT update / IT security

Current State ERM Observations

- ❑ GRC2 roll-out has the ability to significantly enhance the organization and reliability of internal control reports
- ❑ Agendas often cover the same material, which limits organic cross-Agency collaboration
- ❑ Dotted line relationship between Agency internal control heads and Chair of ERM
 - Lack of centralized top-down strategic approach to provide overall direction, drive initiatives and identify enterprise-wide risks
- ❑ Fraud risk assessments have recently been implemented and may be more effective by incorporation in the vulnerability assessment
- ❑ Issues that present MTA HQ-level risk are not always handled with the same diligence at the Agency-level

Source: MTA documents and interviews

GRC2 Centralized Risk Library and Policy Repository

Universal adoption and quality, standardized inputs will be critical in ensuring success of the GRC2. The repository should eventually become the backbone of the MTA's Risk Management Function and allow for more effective monitoring

Scheduled Implementation: Q2 2019

Phase 1

Policy Management

Corrective Action Management

Enterprise Management & Reporting



Scheduled Implementation: Q3 2019

Phase 2

Enterprise Risk Management

Compliance & Regulatory Change
Management

Controls Testing

Audit Tracking



Scheduled Implementation: Q4 2019

Phase 3

Vendor Risk Management

Threat & Vulnerability Management

Business Continuity Management

Training Management

*A Centralized risk library should **eliminate the need for disparately tracked spreadsheets** at the Agency - level and provide a more **holistic view of the risks and associated tests** being conducted across the enterprise*

*The software should create a closer to **real-time view of the MTA's Risk Management Program**, while also providing **streamlined workflows** to ease the currently burdensome internal controls testing and reporting cycle*

*The integration of **vendor management data** could complement the risk library and solidify **the foundation** from which the MTA's go-forward Risk Management Program will be anchored*

Source: MTA documents and interviews

Observations of Current Internal Controls Process

- Due to the fact that the risk assessments (i.e., vulnerability assessments), as well as testing and monitoring are performed by each Agency, the process is decentralized and often results in a communication breakdown as information is reported from the business process owners creating the vulnerability assessments ("VAs") and performing the testing
 - At an enterprise-level, the work performed by MTA's Internal Controls team is often duplicative and rarely leveraged by Audit Services
- Reviews of similar business processes across Agencies may be prioritized at different levels; similar risks may be ranked differently by Agencies because risk rating and frequency of testing are determined by Agency's judgment
- Currently the vulnerability assessments completed by the Internal Control Managers / Coordinators residing in each department are housed at the Agency-level, often in separate files
 - The disparate location of the VAs (and the underlying files) makes cross Agency analytics untenable
 - Risks identified in VAs appear to be focused on business processes; VAs are prepared by business process owners and identify the "potential exposure if something goes wrong" for each process; other types of risks do not appear to be incorporated (compliance, fraud)
 - VAs may not be timely updated to account for changes in an Agency's business; Bridges and Tunnels did not reflect the Cashless Tolling change until over a year after its implementation
 - "Risk Guidance" (guideline to determine level of risk as very low, low, medium, high, or very high) does not explicitly consider fraud risk
- Fraud Risk Assessments were recently introduced and are performed independently of vulnerability assessments with a significantly smaller scope (i.e., single subject reviews / discussions between MTA HQ compliance and the individual's responsible at each Agency)
- Corrective actions are performed at the Agency-level in a vacuum, but in certain circumstances, could be socialized and applied enterprise-wide via the ERM
- Due to lack of resources and a lack of centralized databases, the Internal Control Groups do not appear to be able to leverage data analytics to proactively manage risk. Real-time dashboards, KPI's, and enterprise-wide standardized reports have not been universally adopted to-date

Source: MTA documents and interviews

Compliance Redesign: Internal Control Officer Centralization

Centralizing the ICOs and evolving the Internal Controls Program should better position the organization to manage risk at the source and facilitate more impactful collaboration with Audit Services, external auditors, and the Board

Current State Observations

- ❑ Agency-level internal control officers report to Agency leadership and therefore operate in a **decentralized** manner
- ❑ **Disparate risk assessment** process across enterprise promotes **inconsistent testing** and dilutes efficacy of program
- ❑ Internal controls program currently aimed at producing **year end certification** and report
- ❑ ICOs sit in various departments from Agency to Agency and some maintain **other responsibilities** in addition to overseeing the internal controls program for their Agency

Ideal Future State

- ❑ Centralization - increased collaboration with management, empowered / informed **'tone at the top'**
- ❑ Roll out of RSA Archer **risk library** should provide a centralized repository for Agencies to leverage
- ❑ ICOs reporting to HQ should facilitate a shift to a more hands on, **proactive approach**
- ❑ **Fully dedicated ICOs reporting to HQ and embedded in Agencies** should streamline communications with Agency partners and ensure program functions in accordance with mandate

Source: MTA documents and interviews

The Proposed Internal Controls / Compliance Organization Should Have a Clear Strategy and an Operating Model that Best Leverages Scale and Skill

Strategic

- Maintain direct line of communication to Chief Compliance Officer (“CCO”) via ERM Committee Meetings and real time monitoring of independent tests via RSA Archer Risk Library

Center of Excellence / Leveraging ERM Committee Meetings

- Center of Excellence should be sole owners of Agency Vulnerability Assessments / Risk Management with backing of authoritative voice from CCO
- Time previously spent developing reports can be repurposed for more insightful and value added testing and remediation
- Cross entity training performed by the OAG for the benefit of ICOs should better qualify the Internal Controls staff for their risk management responsibilities
- Alternate ERM meeting hosts month-to-month to diversify the agenda and empower the group to socialize emerging risks in their respective Agencies. Periodically include representatives from the other lines of control (OIG and Audit Services) to keep them apprised of changes to the business and the associated risks

Shared Service Delivery

- Reposition / reassign to more efficiently leverage FTEs and foster a more dedicated risk management program from top to bottom
- Revised structure should eliminate potential risk management loss of fidelity due to dual roles. Dedicated resources for ICOs should lead to more effective and complete testing

Source: MTA documents and interviews

Key Takeaways on Internal Controls

1

Flow of Information

- Currently, Agency ICOs appear to prefer to keep certain issues within their respective Agencies, reducing MTA HQ Compliance's visibility into Agency-level risks
- Embedded internal control employees reporting to corporate compliance should create an end to end direct reporting line

2

Empowerment

- ICOs are not empowered to take action and there is a lack of standardization across Agency internal control processes, structure, approach, and reporting
- Centralized Head of Compliance will gain 15-20 FTEs via consolidation from the Agencies, which should allow the delivery of a strong message to ensure ICO's receive adequate cooperation from their embedded managers / coordinators

3

Employee Rotations

- Consider leaving a set number of positions open for rotating employees
- Having employees rotating into Internal Controls from various other departments should have a dual benefit: (1) employees should benefit from increased visibility and the perspective of an audit (2) Audit Services should gain subject matter expertise

4

New Centralized Internal Controls

- Internal control process is aimed at producing a report for year-end certification rather than truly managing risk in real-time
- Realigning resources and instituting standardized cross-Agency reports should allow for more effective and timely monitoring and active coordination



Annual Compliance Policy Training

Observations and Key Takeaways

MTA Annual Compliance Policy Training

The MTA’s Risk Management Program would greatly benefit from revisiting the content, volume, and audience of its annual compliance policy training program

Observations on Current Annual Compliance Training Process	Key Takeaways for Improving Culture of Compliance
<p>Annual 30-minute compliance policy training webinars for non-represented employees only. Represented employees are required to complete compliance policy certification every 3 years, rather than annually, to limit overtime incurred. Current training topics include:</p> <ul style="list-style-type: none">• Anti-Nepotism• Computer and Social Media Usage• Travel and Business Expenses• Code of Ethics• Whistleblower	<p>MTA should consider creating a more robust and comprehensive compliance policy training program, including specific examples and associated mitigating behavior for relevant high risk subjects currently impacting the MTA:</p> <ul style="list-style-type: none">• Leverage publicly available findings of OIG to develop new situational training materials, including:<ul style="list-style-type: none">○ Overtime and Time Reporting Abuse○ FMLA and Disability Leave○ Bribery○ Confidentiality <p>Typically such annual compliance policy training and attestation spans 3 to 4 hours per employee</p> <p>MTA should investigate feasibility of represented employees adopting annual online training and certification</p>
<p>MTA’s Code of Ethics was last updated in 2015</p>	<p>Consider incorporating findings from significant events into the MTA Code of Ethics on a more frequent basis</p>

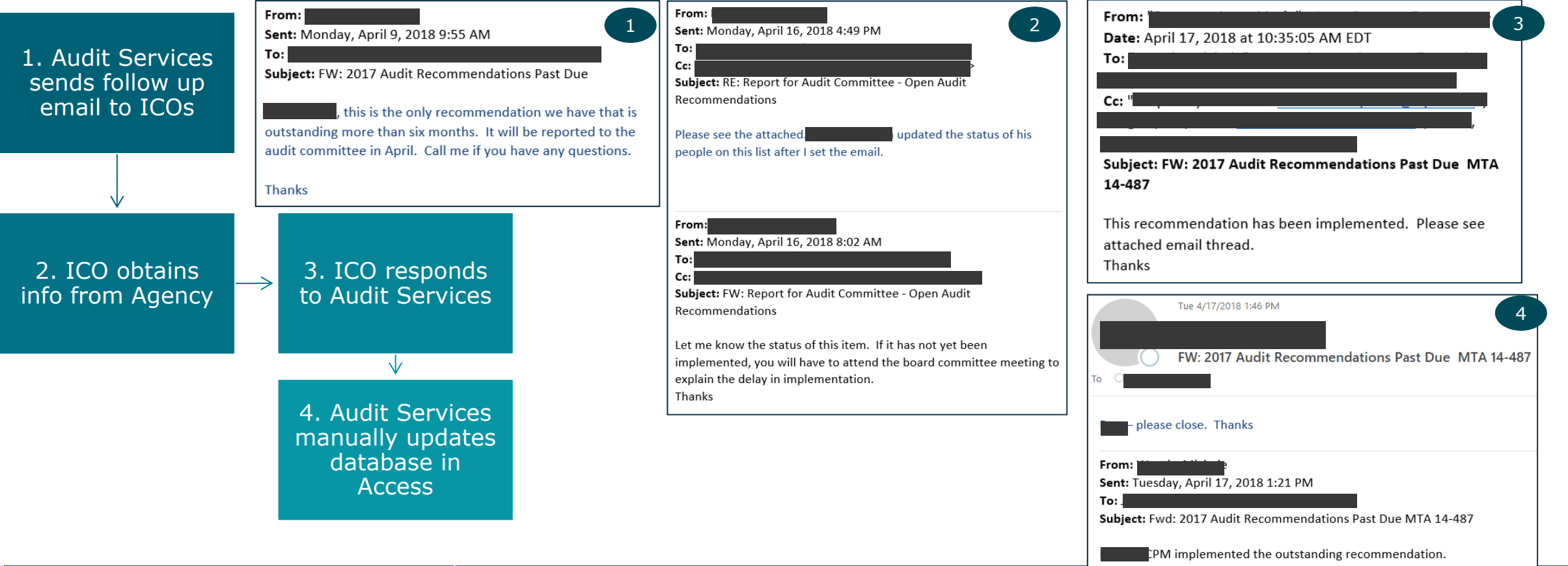
Source: MTA documents and interviews



Section 5 Appendix: Review of Audit Services Recommendation Implementation

Review of Current Process and Key Takeaways

OAG Follow-up Process: Reactive Approach & Extensive Reliance on Email Confirmation



Observations	Key Takeaways
Monitoring of control recommendation is reactive – starts with MTA Audit requesting for status update	Put accountability on ICO / Agency and have Agencies proactively update MTA Audit and provide sufficient evidence once recommendations have been implemented
ICO is middleman / no proactive tracking / manual tracking	Develop an IT system to have Agency update status in real time, eliminating the need for multiple emails, and allowing for efficiency of process. ICOs and Audit Services should be able to monitor progress simultaneously.

Examples of Responses to Implementation of OAG’s Recommendations

From: [REDACTED]

Sent: Wednesday, March 21, 2018 3:00 PM

To: [REDACTED]

Cc: [REDACTED]

Subject: RE: Open Audit Recommendation

Since you’ve received the SSNs and research is in progress, this is now an ongoing initiative so we will consider it to be implemented for recommendation status purposes. Thank you.

From: [REDACTED]

Sent: Wednesday, March 21, 2018 2:53 PM

To: [REDACTED]

Cc: [REDACTED]

Subject: RE: Open Audit Recommendation

Hi [REDACTED],

This is still in progress. We received the information from NYSHIP in regards to SSN’s that we did not have and we have people working on the research and updates. [REDACTED] will provide a further update in regards to numbers.

From: [REDACTED]

Sent: Wednesday, January 31, 2018 8:13 AM

To: [REDACTED]

Cc: [REDACTED]

Subject: RE: Semi-Annual Audit Recommendation Follow Up - Military Pay

Yes. Thank you.

From: [REDACTED]

Sent: Tuesday, January 30, 2018 5:51 PM

To: [REDACTED]

Cc: [REDACTED]

Subject: FW: Semi-Annual Audit Recommendation Follow Up - Military Pay

Hi [REDACTED],

MTA-15-087 – Military Leave (See Attachment)

Agency	DEPT	Report #	Report Title	Report Date	RECOMMEN
MTAHQ	COMPLIANCE	MTA-15-087B	MILITARY PAY	7/13/2015	MTA Corporate Compliance should v Resources representatives as appropr consolidated military leave policy.

MTAHQ had drafted an All-Agency Military Leave Policy (see attachment) that is undergoing review by MTAHQ’s Human Resources Department. The Policy was reviewed by [REDACTED] on 12.27.17 and the draft is being updated accordingly. Once the edits are complete, the draft will be forwarded to [REDACTED] for review.

Is this response sufficient to request to close the finding in GRC?

Audit Recommendation Tracking: 2016-17 Audits

Agency	Audit	Audit Findings	Excerpts from Audit Services Recommendation(s)	APLLP Comments
Bus	MTA 17-097 MTA Bus College Point Depot Timekeeping (12/7/2017)	Identified discrepancies in deviation sheets (e.g., not approved, missing time stamps)	a) MTA Bus Depot mgmt. should reinstruct Depot General Superintendents and Supervisors to establish and follow procedures that will ensure the accurate and complete preparation of deviation sheets. b) MTA Bus Controller mgmt. should instruct Depot mgmt. to monitor the deviation process for accuracy between deviation sheets and time paid, and retain deviation sheets in compliance with record retention policies.	Control implemented - 3/14/19 Permanent Directive provides detailed instruction for filling out Deviation Report forms However, recommendation for process to monitor complete and accurate deviation sheets does not appear to be addressed (recommendation is a continuation of process)
Bus	MTA 17-097 MTA Bus College Point Depot Timekeeping (12/7/2017)	Identified re-rate adjustments were not supported or were incorrect	a) Establish, distribute and monitor approved re-rate tables to be referenced when calculating re-rates and develop a procedure to verify the accuracy of re-rate adjustments entered into UTS... b) Instruct Depot General Superintendents to routinely review PeopleSoft re-rate adjustments to ensure the accuracy of re-rates entered by the Dispatchers.	Control implemented - 6/18/19 Memo provides Standard Operating Procedure for Employee Re-rate reconciliation process
MNR	MTA 16-035A Inventory Ordering (5/31/2017)	Identified inventory that is obsolete	Management should streamline their current practices related to excess inventory. This should include reassessing their excess inventory items based on forecasted and actual usage to determine what should be moved to an obsolete status and removed from inventory.	Control implemented - based on documents provided (quarterly inventory reports), management reviews inventory reports on a regular basis to identify obsolete inventory on a timely manner. However, recommendation ("streamline current process") is not specific.
MNR	MTA 16-035A Inventory Ordering (5/31/2017)	Identified internal report listing inventory was incomplete and inaccurate	Management should work with BSC Procurement to generate existing or ad-hoc reports within PeopleSoft that provides a complete and accurate list of potential excess assets that can be reviewed with MofE Operations throughout the year; and, reassess the items considered/classified as "Obsolete", "Protect" and "Repair and Return" and, update them in PeopleSoft accordingly.	Control implemented - based on document provided (ad-hoc report) and discussion with management, management generates new reports for review (instead of using old reports used for financial reporting purposes)

Audit Recommendation Tracking: 2017 Audits

Agency	Audit	Audit Findings	Excerpts from Audit Services Recommendation(s)	APLLP Comments
LIRR	MTA 17-080 LIRR Overtime (11/13/2017)	Identified excessive continuous overtime worked by track employees	LIRR Labor Relations should work with other departments as appropriate to identify a strategy to reduce assignments with excessive continuous work hours. Track management should routinely review continuous overtime hours worked and rotate employees when allowable and feasible	Based on status report provided, recommendation was implemented by submitting a Section 6 Notice stating: "Management, at its discretion, can restrict employees from working more than 16 consecutive hours." Per LIRR, this language was submitted for collective bargaining.
LIRR	MTA 17-080 LIRR Overtime (11/13/2017)	Identified time worked outside of regular weekday hours	LIRR Labor Relations should work with MTA HQ Labor Relations to determine the feasibility of creating advertised jobs on weekends and at night in accordance with existing provisions of the UTU contract that defines six and seven day positions.	Based on status report provided, recommendation was implemented by submitting a Section 6 Notice stating: "Any restrictions on management's ability to schedule work in the most efficient and cost-effective manner possible shall be eliminated." Per LIRR, this language was submitted for collective bargaining.
NYCT	MTA 17-119 NYCT Infrastructure Overtime (12/27/2017)	Identified overtime lacking justification and/or supervisory approval	Infrastructure management should reinforce with appropriate personnel the requirements of current overtime procedure and implement routine monitoring and require sign in/ out sheets to be approved by appropriate levels of authority.	No support provided; The Office of the Controller does not track the implementation of recommendations resulting from reviews performed by MTA Audit Services.
NYCT	MTA 17-119 NYCT Infrastructure Overtime (12/27/2017)	Identified overtime cap limits are not properly monitored or pre-authorized	BSC Payroll should address specifications provided by MOW Finance to include Maintenance Supervisor II employees in overtime cap monitoring reports. Infrastructure management should require pre-approval by appropriate higher levels of authority for any overtime above the cap limits.	No support provided; The Office of the Controller does not track the implementation of recommendations resulting from reviews performed by MTA Audit Services.
NYCT	MTA 17-156 SIR Timekeeping (3/2/2018)	Identified no preapproval forms authorizing the overtime worked	SIR management should reinstruct the supervisors on the proper use of the justification field, submitting pre-approval forms authorizing overtime to Timekeeping and explaining the overtime justification on the exception form.	No support provided; The Office of the Controller does not track the implementation of recommendations resulting from reviews performed by MTA Audit Services. However, recommendation (reinstruction of policy) does not provide detective/preventative controls for when process is not followed

Audit Recommendation Tracking: 2017 Audits

Agency	Audit	Audit Findings	Excerpts from Audit Services Recommendation(s)	APLLP Comments
B&T	MTA 17-021 B&T Procurement Card Program (4/28/2017)	Identified spending limits in excess of monthly limit per policy	B&T Procurement Management should update their policy to clarify single and monthly transaction limits, such as including a time period that increases are to be in effect for; a monitoring control to ensure that these limits are reset after specified time periods lapse; and, establish a threshold for limit increases.	Recommendation was implemented (based on a Jan. 2018 revised Procurement Credit Card Procedure). However, implementation and communication were delayed: 4/28/2017 report date 9/30/2017 target implementation date 2/13/18 OAG follow up 1/31/18 revised policy issued 4/25/18 email communication on revised policy
B&T	MTA 17-021 B&T Procurement Card Program (4/28/2017)	No process in place to identify potential split purchases (to avoid single purchase transaction limits)	B&T Procurement Management should investigate the nature of these transactions and formally re-instruct cardholders that split purchases are prohibited and develop and review reports on a monthly basis to facilitate the identification of potential split purchases.	Recommendation appears to be implemented based on email communication reminding cardholders of split purchase policy and regular emails communicating split purchases are being investigated. However, no additional documentation (e.g., analysis if split purchases) were provided to demonstrate process is being performed.
B&T	MTA 17-021 B&T Procurement Card Program (4/28/2017)	Identified lacking supporting administrative documents (e.g., card holder agreement/ consent form, training confirmation, monthly reconciliations)	a) Ensure that all required forms are properly completed, submitted and maintained by the Procurement Department b) Investigate whether or not these MCC's are in compliance with the PCC policy or designated as prohibited, and they should contact JPMorgan Chase and ensure that only authorized codes are active for purchasing transactions.	Recommendation appears to be implemented based on forms obtained for cardholders and email confirming bank was contacted about MCC codes. However, no additional documentation (e.g., analysis of MCC codes) were provided to demonstrate process is being performed.

Audit Recommendation Tracking: 2018 Audits

Agency	Audit	Audit Findings	Excerpts from Audit Services Recommendation(s)	APLLP Comments
MTA HQ	MTA 18-107 MTAPD Overtime (3/29/2019)	Metrics to evaluate program effectiveness (overtime vs. expected outcomes) were not yet established	MTAPD management consider establishing performance metrics to measure the success of initiatives in the future to better evaluate program outcomes.	Internal Controls does not maintain documentation.
MTA HQ	MTA 18-107 MTAPD Overtime (3/29/2019)	Identified overtime forms not signed by supervisor or incomplete and overtime days are missing in log book	<p>MTAPD Administration management:</p> <p>a) Reinstruct supervisors to verify payroll sheets against Overtime forms and ensure all required information is complete and appropriately signed prior to submitting them to Police District Administrators for entry into PeopleSoft for payroll processing.</p> <p>b) Reinstruct sworn members to follow Section #8-02 of the Department Manual that requires supervisors to make entries in the District Logbook that Members scheduled to work are present and accounted for at roll call</p>	Internal Controls does not maintain documentation
MTA HQ	MTA 18-107 MTAPD Overtime (3/29/2019)	Identified manual payroll-related duties that could be improved with automation	MTAPD Administration work with MTA IT to determine the feasibility of implementing further automation and streamlining of the timekeeping process where practical.	Internal Controls does not maintain documentation

Audit Recommendation Tracking: 2018 Audits

Agency	Audit	Audit Findings	Audit Services Recommendation(s)	APLLP Comments
LIRR	MTA 18-021 LIRR Compensatory Time (8/3/2018)	Employee compensatory time was not subject to preapproval for certain employees/departments and identified compensatory time due to processing manual time slips	1) Crew Management should work with MTA IT to expedite the efforts to implement PTS and, once implemented, explore other system interfaces that could be established to minimize the amount of manual validation that may be needed. 2) Crew Management should reevaluate metrics for determining how many claims should be processed daily by Crew Office personnel and track the work actually performed.	Implementation date was revised from 12/31/2018 to 12/31/2019. "BY Q4 2018, management will continue to work with MTA IT to expedite the efforts to implement PTS and explore other system interfaces that should be established to minimize the amount of manual validation that may be needed" "Transportation Services is working with MTA IT to resolve a defect before PTS can go live." No compensating controls while waiting for system to go live
LIRR	MTA 18-021 LIRR Compensatory Time (8/3/2018)	Same as above	3) Departments with TCU Exception 5 employees who do not currently obtain written pre-approval of compensatory time (Transportation Services and Market Development & Public Affairs), should establish a practice of obtaining written preapproval of compensatory time, where feasible.	Provided status that as of 12/31/2018, process was implemented. However, process varies by department
LIRR	MTA 18-021 LIRR Compensatory Time (8/3/2018)	Identified accrued compensatory time balances not being used/paid in a timely fashion	4) LIRR Transportation management determine what further actions may be taken to enable employees to exercise their option of taking compensatory time or be paid for it and work with other departments as needed to develop a proposal to right-size its labor force.	Implementation date was revised from 12/31/2018 to 12/31/2019, when Transportation Services performs an analysis to evaluate sufficiency of current labor force to control earning of comp time and determine appropriate actions.



Section 5 Appendix: Review of Internal Controls Corrective Action Implementation

Review of Current Process and Key Takeaways

Internal Control Corrective Action Tracking: 2016-2017 Internal Control Report

Agency	Risk Rating	Business Process	Weakness / Deficiency from Internal Control Report	Corrective Action(s) from Internal Control Report	APLLP Comments
MTA CC	Medium	IPS Updates	The review disclosed certain contractors continued to not meet the contractual schedule requirements...	MTACC continues to work with the Construction Managers office and the contractor(s) as a mechanism for solving these deficiencies via ACE evaluations and meetings when/where necessary as well to be proactive in its monitoring of the contractors' progress while waiting for them to meet a complaint schedule requirement.	No corrective action appears to be provided to correct the weakness / deficiency as actions appear to be a continuation of processes already being performed
NYCT	Medium	Safeguarding Authority Assets	The review revealed that none of the locations sampled had conducted an inventory reconciliation within the last 4 years...	All DCE locations will be notified to conduct an inventory reconciliation before March 2017 and update the Inventory records; Quality Assurance will conduct an audit to ensure compliance with inventory reconciliation before July 2017. Locations will be randomly tested after July 2017 and the results of this test will be communicated back to management.	A memo was distributed to relevant parties to communicate the finding and listed specific corrective actions to address the finding. The corrective action was marked implemented even though only one of the corrective actions appears to have been completed [see following page]
MTA HQ	High	Procurement of Personal Service Contracts	BSC Procurement was both the user of KPMG's consulting service and the procurer of those services. Therefore, the CPO was in the position to request and authorize any modifications (i.e. supplemental or change orders) to his own contracts without additional scrutiny, thereby creating an inadequate segregation of duties.	When BSC Procurement is both the user of a service and the procurer of the related contract, and a proposed modification to the contract would increase its value substantially, the MTA Chief Financial Officer must approve the change.	Implemented by estimated date - Memo directive issued to update policy to correct issue; updated policy later issued to apply not only to BSC Procurement

Internal Control Corrective Action Tracking: Example

- [A] Memo documents that corrective actions have been implemented
- [B] Weakness / deficiency is related to inventory reconciliation not being performed
- [C] Corrective Action included 3 items:
 - 1. Quality Assurance to conduct site assessments (including reviewing inventory lists)
 - 2. Quality Assurance to perform annual inventory audits
 - 3. Division will develop a standardized inventory reconciliation report

Based on the documents provided, only item 1 above was completed and the corrective action was marked implemented. We also noted that a similar weakness / deficiency was identified in the following year’s internal control report.

Key Takeaway:
Split corrective actions in order to accurately monitor each item.

Date November 15, 2017

To [REDACTED]

From [REDACTED]

Re **Certification of 2016 Corrective Actions**

[A] This memo is to certify that, in compliance with the Internal Control Act, the Department of Subways/Division of Car Equipment has implemented the corrective actions necessary to address the open significant / minor weaknesses that were uncovered during the 2016 review process. The details pertaining to the activity and the actions taken are listed below:

Department / Division: Subways/Car Equipment
High Risk Activity: Safeguarding Authority Assets
Test ID: DCE 16-06

[B] Weakness: None of the locations sampled had conducted an inventory reconciliation within the last 4 years; there were several high value items that were listed on the Inventory spreadsheet but could not be located for physical verification; there were items on the floor that were not listed on the Inventory spreadsheet; an item that was scrapped in 2014 was still listed as active on the Inventory spreadsheet.

[C] Corrective Action: As a result of this internal control review, Quality Assurance conducted site assessments at each shop location to ensure compliance with the DCE Facilities Maintenance Plan and proper safeguarding of Authority assets. Each shop provided its inventory list and objective evidence that they are reviewing and updating their inventory records. Quality Assurance will perform annual inventory audits and the division will develop a standardized inventory reconciliation report to be used by all locations beginning in 2018. To ensure compliance, this Internal Control will be retested in 2017.

[A] Date of implementation (per IC Testing Record): 7/31/17
Date actually implemented: 5/4/17
Person responsible [REDACTED]
Telephone number of person responsible: [REDACTED]

Sources: MTA interviews, review of Internal Control documents
PLEASE SEE DISCLAIMER ON PAGE 101

Internal Control Corrective Action Tracking: 2017-2018 Internal Control Report

Agency	Risk Rating	Business Process	Weakness / Deficiency from Internal Control Report	Corrective Action(s) from Internal Control Report	APLLP Comments
MTA HQ	Medium	Match Exception Report	Invoice payments have been delayed due to match exceptions not resolved in a timely manner.	BSC Accounts Payable and BSC Procurement are drafting an all Agency communication guidance for addressing and resolving the R600 (receipts exists but do not match) match exceptions.	Implemented by estimated date – a revised guide was issued and an email communication was sent
LIRR	Very High	Hour of Service Program	Time on Duty Not Recorded - one Conductor not in the electronic HOS system did not submit a manual record of his covered or non-covered time from January to November 2017. Audit estimated that the LIRR could have been assessed a potential fine of \$486,000 by the FRA.	<p>The HOS manager submitted a SAFER violation to report the employee as non-compliant for not completing and certifying his HOS records timely.</p> <p>Manual cards for Train & Engine personnel will continue to be audited for accuracy on a monthly basis by the HOS Manager. Manual cards will also continue to be scanned into a database where they are reviewed and processed. In addition, the Transportation Rules Office will continue to identify violations via monthly audits of the electronic HOS system, supervisor notifications to the HOS Office and self reporting by the employee.</p>	Per discussion with ICO, recommendation has been implemented, but no additional documentation was maintained. Further, no corrective action appears to be provided to correct the weakness / deficiency as actions appear to be continuation of processes already being performed.
NYCT	Medium	Safeguarding Authority Assets	4 of 7 locations tested (57%), no evidence was provided to indicating that an inventory reconciliation had been completed within the year.	<p>Quality Assurance will perform annual inventory audits, and the division will develop a standardized inventory reconciliation report to be used by all locations.</p> <p>There will be one Property Control Officer designated to oversee the implementation of the standard report and annual reconciliation process across all DCE locations; inventory location management at each facility will be trained accordingly</p>	<p>A March 2018 memo was issued noting that corrective actions were implemented but it is unclear if it is indicating the plan for action or actual implementation occurred.</p> <p>Also, only part of the recommendation was performed based on documents provided (i.e., QA audit documents), however, a standardized inventory reconciliation has not been developed.</p> <p>[see following page]</p>

Internal Control Corrective Action Tracking: Example

- [A] Memo documents that corrective actions have been implemented

[B] Corrective Action lists 3 items that “will be” performed:

 1. Standardized Inventory Reconciliation Report will be developed
 2. There will be one Property Control Officer designated to oversee reconciliation
 3. Management will be notified and QA audit will be performed

Based on the memo, it appears that there is a plan in place to implement the corrective actions, however, these actions are not yet completed. A “plan to implement” is not the same as “implemented.”

Upon review of further documents provided, including QA audit reports, it appears that only one of the recommendations has been implemented.

Key Takeaway:

Mark action as implemented only when the control / process is completely performed in order to monitor risk on a continuous basis.

Date March 6, 2018

To [REDACTED]

From [REDACTED]

Re Internal Control Review 2017: Corrective Action Memo

Based on the 2017 Internal Control audit report, following actions were implemented:

1. Passenger Car Inspections – DOSIC update:
QA reinstructed to ensure information on DOSIC is current and uploaded at regular intervals.
2. Car washer / sump/cleaning – MP2 update:
DCE Car wash Locations notified to update inspection records on MP2.
3. Safeguarding Authority Assets:
 - The Standardized Inventory Reconciliation Report will be developed by July 2018
 - There will be one Property Control Officer designated to oversee the implementation of the standard report and annual reconciliation process across all DCE locations
 - Management at each location will be notified via a system wide Memorandum and a follow up QA audit to verify the same before December 2018
 - This control will be tested again in 2019