

# Metropolitan Transportation Authority

## Forensic Performance Audit

### Report Draft

MTA Board Meeting  
December 18, 2019

Presented by Crowe LLP

Entry Downtown & Brooklyn

Video surveillance cameras  
in use at this station

Special  
entry

Entry

Entry

Entry

Entry

Entry

Entry

# Objective and Conclusions

# Forensic Performance Audit

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## Overview of Audit

- Independent Audit of the MTA's capital planning process
- Consistent with industry leading practices
- Audit findings identify areas that could be improved, but 2020-24 Plan does not require modification. Areas for improvement include:
  - Cost Estimating
  - Asset Inventory condition assessment documentation
  - Modernization of Capital Planning Systems
- Recommendations are directed at how to implement the 2020-24 Capital Plan and gain efficiencies during implementation
- Recommendations to improve the future capital planning processes

# Context: Section 1279-f

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Section 1279-f of the Public Authorities Law required the MTA to conduct an independent forensic audit of the MTA's capital planning process. Specific language is provided below:

*As required by Section 1279-f of New York Public Authorities Law: The MTA “shall contract with a certified public accounting firm for the provision of an independent, comprehensive, forensic audit of the authority. Such audit shall be performed in accordance with generally accepted government auditing standards. Such audit shall include, but is not limited to a complete and thorough examination and detailed accounting of the authority’s capital elements, broken down by agency, including, but not limited to: rolling stock and omnibuses, passenger stations, track, line equipment, line structures, signals and communications, power equipment and substations, shops, yards, maintenance facilities, depots and terminals, service vehicles, security systems, electrification extensions, and unspecified, miscellaneous and emergency.”*

*The authority shall also contract with a financial advisory firm with a national practice for the provisions of a review of: (a) any fraud, waste, abuse, or conflicts of interest occurring within any department, division, or office of the authority, its subsidiaries, affiliates, and subsidiaries of affiliates; (b) any duplication of functions or duties between the departments, divisions or office of the authority, its subsidiaries, affiliates, and subsidiaries of affiliates; (c) options for potential cost efficiencies and savings that could be achieved through changes in internal controls and management reforms, functional and process streamlining, internal procurement process reforms; (d) the two thousand fifteen to two thousand nineteen capital plan for cost overages and duplication; (e) the development of standardized performance metrics for planning, design, approvals, change orders, project management and delivery; and (f) cash flow and accounting of expenditures of the authority, its subsidiaries, affiliates, and subsidiaries of affiliates for the preceding three fiscal years.*

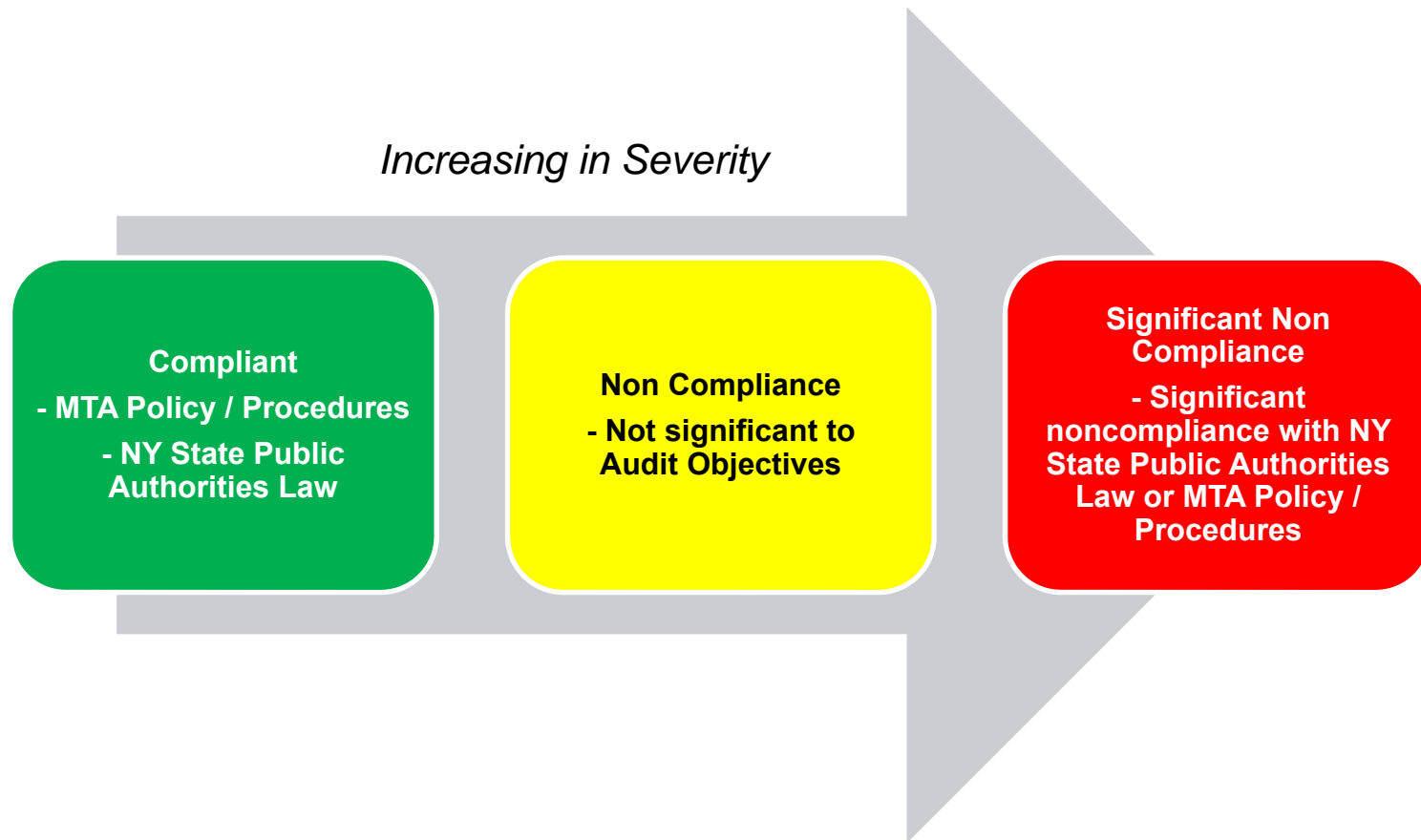
# Objectives/Conclusions

	Audit Objective	Conclusion
1	Determine whether asset conditions are accurately documented.	Asset condition ratings are accurately documented, except as reported in Finding 4.
2	Determine whether MTA’s condition assessment of current assets warrants the need for replacement and is based on condition standards provided by the MTA.	MTA’s assessment of current asset conditions warrants the need for replacement based on MTA standards.
3	Determine whether MTA’s comprehensive policies and procedures are properly designed and implemented for preparation of the Five Year Capital Plan.	MTA’s policies and procedures are properly designed and implemented for preparation of the Five Year Capital Plan. However, comprehensive procedures are needed to guide the capital planning process, as reported in Finding 9.
4	Determine whether the Five Year Capital Plan complies with applicable laws, rules, regulations, and ordinances, as designated by the MTA and/or Public Authorities Law.	The Five-Year Capital Plan complies with applicable laws, rules, regulations, and ordinances, as designated by the MTA and Public Authorities Law.
5	Determine whether MTA capital planning processes are consistent with industry leading practices using a sample of peer organizations as agreed by MTA.	MTA capital planning processes are consistent with industry leading practices. There are improvements recommended in Findings 3, 5, 6 and 7.
6	Determine whether the mix of investments and cost ranges included in the 2020-24 Five Year Capital Plan are based on the Twenty Year Needs (TYN) conditions and investment strategies.	The 2020-24 Five Year Capital Plan is based on TYN conditions and investment strategies. There are improvements recommended in Findings 2 and 8.
7	Determine whether cost overages and/or duplication of projects occurred in projects related to the 2015-19 Capital Plan and assess whether cost overages and duplications are evaluated and documented by MTA.	Cost overages and/or duplication of projects occurred in projects related to the 2015-19 Capital Plan, as reported in Finding 1. Cost overages and duplications were evaluated, documented and approved by the MTA.

# Findings

# Capital Planning Review Forensic Performance Audit Compliance Definitions

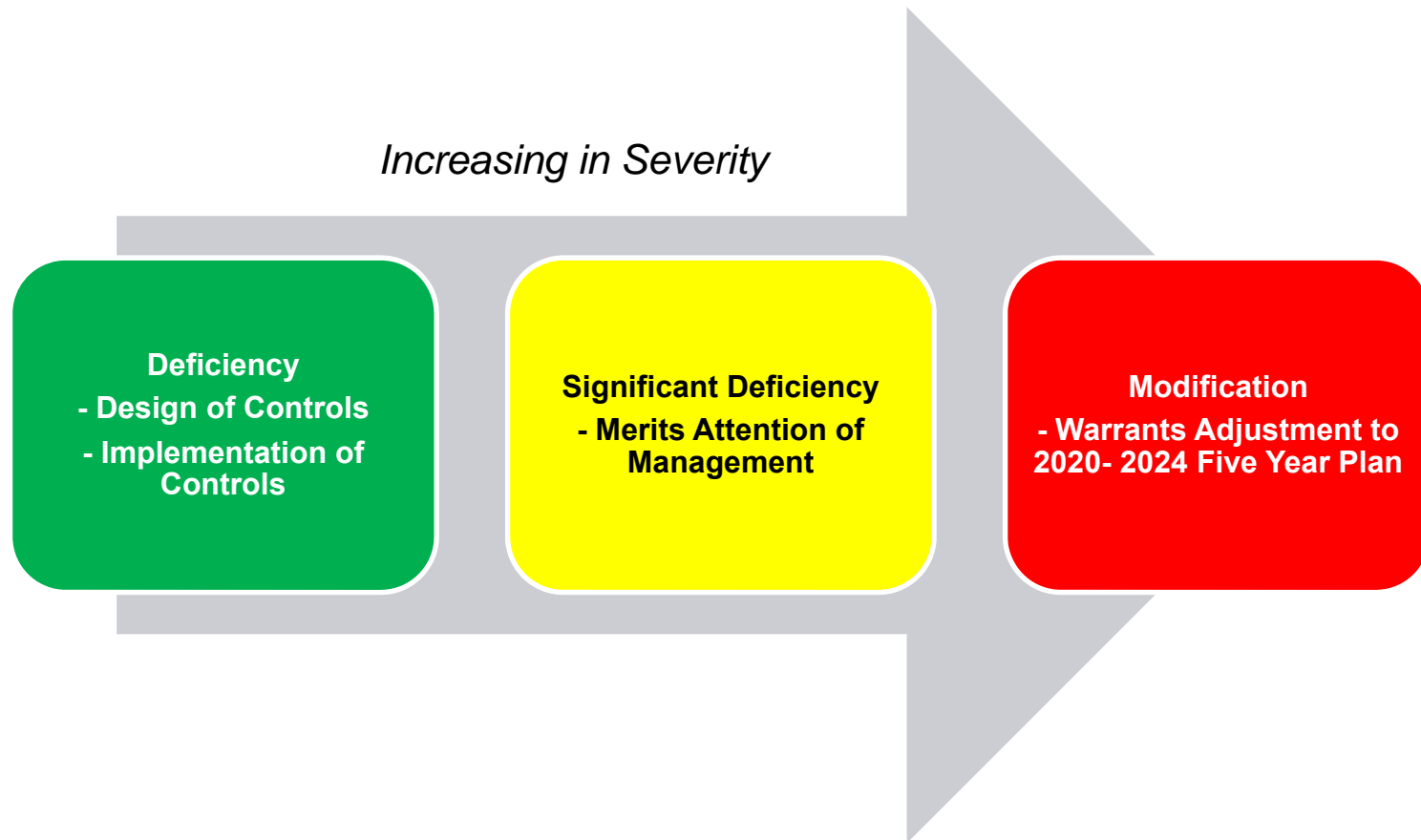
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# Capital Planning Review Forensic Performance Audit

## Control Deficiency Definitions

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# Findings Evaluation

Finding		Audit Objective Impacted	Compliance (significant noncompliance or noncompliance)	Control Evaluation
<b>Cost Estimates</b>				
1	MTA can improve cost estimates with more formal, standardized, and consistently applied cost estimating procedures and agency documentation requirements	7	Noncompliance	Significant Deficiency
2	MTA budgeted costs exceed comparative benchmarks for various reasons and MTA should consider a range of alternative management approaches to control future costs	6	N/A	Deficiency
<b>Asset Inventories and Condition</b>				
3	MTA can enhance linkages between planned capital projects and assets targeted for repair/replacement within agency asset inventories	5	Noncompliance	Deficiency
4	MTA has comprehensive asset condition databases which reflect existing conditions, however MTA should supplement its asset condition database contents to better support asset condition determinations	1	Noncompliance	Significant Deficiency
<b>Capital Planning Processes</b>				
5	MTA has invested in enterprise asset management system, however MTA has yet to realize significant MTA level capital planning benefits from this tool	5	N/A	Deficiency
6	MTA's largely manual TYN and Five-Year Plan processes and disparate data platforms create challenges for the MTA and agencies to assess priorities, backlogs, and alternative scenarios	5	N/A	Deficiency
7	The MTA can improve transparency of performance measures and dashboarding to more closely monitor Five Year plan and project outcomes	5	N/A	Deficiency
8	There are some limitations in MTA capital planning review and approval processes	6	N/A	Deficiency
9	While MTA and agencies have some documented policies and procedures, the MTA and agencies do not have fully documented capital planning policies and procedures	3	N/A	Significant Deficiency

# Recommendations

# Recommendations

Finding		Recommendations
<b>Cost Estimates</b>		
1	MTA can improve cost estimates with more formal, standardized, and consistently applied cost estimating procedures and agency documentation requirements	<ul style="list-style-type: none"> <li>Develop Cost Estimating guide with methods, templates, use of Basis of Estimate (BOE) and support for analogous estimates and unit costs</li> <li>Require immediate master planning, BOE, and detailed cost estimates for projects in years 1 and 2 of the 2020-24 Five Year Capital Plan; update</li> </ul>
2	MTA budgeted costs exceed comparative benchmarks for various reasons and MTA should consider a range of alternative management approaches to control future costs	<ul style="list-style-type: none"> <li>Use annual capital programming cycle</li> <li>Manage expenditures with a range of planning, contracting, logistics, project management, and communications improvements</li> </ul>
<b>Asset Inventories and Condition</b>		
3	MTA can enhance linkages between planned capital projects and assets targeted for repair/replacement within agency asset inventories	<ul style="list-style-type: none"> <li>Perform cross-walk between investment strategies and asset condition database to ensure linkage between TYN and 5YP</li> <li>Document specific plans for assets an agency will address with allotments</li> <li>Develop form with asset(s) condition, replacement need, cost estimate, and cost benefit analysis for 5YP projects. Record when/why assets removed from 5YP</li> </ul>
4	MTA has comprehensive asset condition databases which reflect existing conditions, however MTA should supplement its asset condition database contents to better support asset condition determinations	<ul style="list-style-type: none"> <li>Implement procedures and systems to ease manual asset condition processes, provide consistent and accurate condition information to establish capital needs</li> <li>Make certain changes/updates to existing data sets</li> <li>Enhance coordination channels between maintenance and capital programs for timely/current condition information</li> <li>Refine definitions of state of good repair (SGR), normal replacement (NR) and system improvement (SI)</li> <li>Prepare a succession plan to capture and transfer employee knowledge of capital planning processes and procedures</li> </ul>

# Recommendations *(continued)*

Finding		Recommendations
<b>Capital Planning Processes</b>		
5	MTA has invested in enterprise asset management system, however MTA has yet to realize significant MTA level capital planning benefits from this tool	<ul style="list-style-type: none"> <li>• Develop detailed enterprise asset management system (EAM) project schedule with timelines/milestones for implementation</li> <li>• Seek opportunities to show near-term progress in capital planning on the EAM initiative. Provide regular EAM progress reports to management</li> </ul>
6	MTA's largely manual TYN and Five-Year Plan processes and disparate data platforms create challenges for the MTA and agencies to assess priorities, backlogs, and alternative scenarios	<ul style="list-style-type: none"> <li>• Employ SGR decision support tool to enable objective, data driven, risk-based project selection. Complete in next two years</li> <li>• Seek opportunities to show near-term progress on SGR tool by piloting use to show how tool can replicate project priorities and project costs in current 5YP</li> </ul>
7	The MTA can improve transparency of performance measures and dashboarding to more closely monitor Five Year plan and project outcomes	<ul style="list-style-type: none"> <li>• Prepare periodic reporting and dashboarding on delivery progress of each 5YP (both dollar value and projects delivered)</li> <li>• Use Earned Value Management (EVM) and key performance indicators (KPI) for project reporting</li> </ul>
8	There are some limitations in MTA capital planning review and approval processes	<ul style="list-style-type: none"> <li>• Implement capital planning process changes including:               <ul style="list-style-type: none"> <li>• Establish governing body charged with TYN review/approval</li> <li>• Remove or revise project nomination cycle policy to realistically reflect time necessary to develop capital plans</li> <li>• Provide draft TYN and 5YP documents to the Board / public 45 days in advance of planned approval with opportunity for written public comment</li> </ul> </li> </ul>
9	While MTA and agencies have some documented policies and procedures, the MTA and agencies do not have fully documented capital planning policies and procedures	<ul style="list-style-type: none"> <li>• Develop comprehensive policies and procedures for the 5 Year Capital Plan and Twenty Year Needs Assessment processes</li> <li>• Develop/update policies and procedures for acquisition, maintenance, disposition, and inventorying of assets at agency and organizational levels</li> </ul>