



**NY Power
Authority**

**Canal
Corporation**

**MINUTES OF THE REGULAR JOINT MEETING
OF THE
NYPA AND CANAL AUDIT COMMITTEE**

December 11, 2018

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December 11, 2018

Minutes of the regular meeting of the New York Power Authority and Canal Corporation's Audit Committee held, via video conference, at the Clarence D. Rappleyea Building, 123 Main Street, White Plains, New York, at approximately 8:09 a.m.

The following Members of the Audit Committee were present:

Eugene Nicandri, Chairman
John R. Koelmel
Tracy McKibben
Anne Kress - Rochester

Anthony Picente, Jr. – Excused

Also in attendance were:

Michael Balboni	Board Member
Dennis Trainor	Board Member
Gill Quiniones	President and Chief Executive Officer
Justin Driscoll	Executive Vice President and General Counsel
Angela Gonzalez	Senior Vice President – Internal Audit
Kimberly Harriman	Senior Vice President – Public & Regulatory Affairs
Soubhagya Parija	Senior Vice President and Chief Risk Officer
Lee Garza	Senior Vice President – Financial Operations & Acting Controller
Karen Delince	Vice President and Corporate Secretary
Joseph Gryzlo	Vice President and Chief Ethics and Compliance Officer
Lorna Johnson	Senior Associate Corporate Secretary
Sheila Quatrocci	Associate Corporate Secretary
Todd Fowler	Lead Engagement Partner – KPMG
Grace F. Kachigian	Senior Audit Manager – KPMG
Jason Garfield	Audit Manager – KPMG

Chairman Eugene Nicandri presided over the meeting. Corporate Secretary Delince kept the Minutes.

Introduction

Chairman Nicandri welcomed committee members and senior staff to the meeting. He said the meeting had been duly noticed as required by the Open Meetings Law and called the meeting to order pursuant to section B(4) of the Audit Committee Charter.

1. **Adoption of the December 11, 2018 Proposed Meeting Agenda**

Upon motion made by member Tracy McKibben and seconded by member John Koelmel, the agenda for the meeting was adopted.

2. **Motion to Conduct an Executive Session**

“Mr. Chairman, I move that the members conduct an executive session to discuss matters leading to the appointment, employment, promotion, demotion, discipline, suspension, dismissal or removal of a particular person.” Upon motion made by member Tracy McKibben and seconded by member John Koelmel an Executive Session was held.

3. **Motion to Resume Meeting in Open Session**

“Mr. Chairman, I move to resume the meeting in Open Session.” Upon motion made by member John Koelmel and seconded by member Tracy McKibben, the meeting resumed in Open Session.

Chairman Nicandri said no votes were taken during the Executive Session.

4. **CONSENT AGENDA**

Upon motion made by member John Koelmel and seconded by member Tracy McKibben, the Consent Agenda was approved.

a. **NYPA Matters**

i. **Approval of the Minutes of the Regular
Meeting held on March 20, 2018**

Upon motion made and seconded, the Minutes of the Committee's Regular Meeting held on March 20, 2018 were approved.

**ii. Approval of the Minutes of the Special
Meeting held on May 22, 2018**

Upon motion made and seconded, the Minutes of the Committee's Special Meeting held on May 22, 2018 were approved.

**iii. Approval of the Minutes of the Special
Meeting held on August 7, 2018**

Upon motion made and seconded, the Minutes of the Committee's Special Meeting held on August 7, 2018 were approved.

b. CANAL Matters

i. Approval of the Minutes of the Regular Meeting held on March 20, 2018

Upon motion made and seconded, the Minutes of the Committee's Regular Meeting held on March 20, 2018 were approved.

**ii. Approval of the Minutes of the Special
Meeting held on May 22, 2018**

Upon motion made and seconded, the Minutes of the Committee's Special Meeting held on May 22, 2018 were approved.

**iii. Approval of the Minutes of the Special
Meeting held on August 7, 2018**

Upon motion made and seconded, the Minutes of the Committee's Special Meeting held on August 7, 2018 were approved.

5. **DISCUSSION AGENDA:**

a. **Risk Management Report**

Mr. Soubhagya Parija, Senior Vice President of Risk Management, provided an update of Risk Management's activities to the Committee (Exhibit "5a-A").

Risk Management Projects

Enterprise Risk Management conducted risk assessments for both NYPA and the Canal Corporation ("Canals") and have worked on some of the top risks such as cyber and commodity risks.

Risk Management have revamped all of the Business Continuity Plans. The business resiliency framework will be transferred to Operations for continuing implementation.

As part of the operational risk analysis, Risk Management have completed a competitive analysis of the Authority's assets, including asset valuations, and have implemented Phase One of the Commodity Risk Management System.

Insurance

Risk Management constantly review all of the insurance policies and have implemented an approach to optimize the Authority's premium cost. Risk Management have successfully launched an Owner-Controlled Insurance Policy Program.

Risk Management and Internal Audit Alignment

Risk Management have been working with all Business Units to enable and enhance their approach to Risk Management. In addition, Risk Management have been working closely with the Audit Department to identify, assess and prioritize risks that informs the audit universe, while Internal Audit informs Risk Management's risk assessment process.

The jointly-owned eGRC governance compliance tool system will provide for a centralized risk repository for Risk Management and Internal Audit data to enable collaboration on key Risk Management projects. The eGRC Risk Management tool will establish a connection among different styles of audit entities and how they are related.

The process of risk mapping will be done as part of the eGRC system. A consultant is on board to assist with the implementation; Risk Management is also in the process of hiring a Project Manager with the help of DTO to assist with the implementation of this database on an expedited basis.

In 2019, the goal is that the system will be used for Risk Management and Audit, and then expand to include areas such as Ethics and Compliance, Cyber and Business Continuity.

b. Internal Audit Activity Report

Ms. Angela Gonzalez, Senior Vice President of Internal Audit, provided an update of the Internal Audit ("IA") activities to the Committee (Exhibit "5b i-A" (NYPA); and Exhibit 5b ii-A (Canals)).

i. New York Power Authority Update

2018 Audit Plan Status:

- 43 reports have been issued that are associated with 47 audits.
- IA audits are 92 percent complete; reporting for the remaining four audits will be completed by the end of this year.
- Total 2018 reports for NYPA will be 53 reports and memos.
- Reporting for the remaining five audits will be completed by December 14, 2018 and are expected to be issued by the end of December.

Report Ratings:

The following are the Report Ratings for NYPA:

- 13 "Good"; 10 "Satisfactory"; and 6 "Needs Improvement."
- There were no "Unsatisfactory" reports this year.
- 14 were unrated because of the Assessments / consulting status.

Status of Audit Recommendations:

As of November 30, 2018, two (2017) and 35 (2018) recommendations remained opened, reaching 98% closure for 2017 and 49% for 2018, respectively.

The two remaining 2017 open recommendations have agreed-upon action plans. The Executive Management Committee approved extensions of the original due dates and IA is on track to close those open recommendations by mid-year 2019.

IA is making progress towards closing-out recommendations based on their due dates and will continue to actively monitor remediation efforts with a focus on closing the remaining open recommendations.

Internal Audit Transformation Priorities – 2018 Key Accomplishments:

Branding

- IA conducted a survey, internally, to obtain ideas for refreshing IA's brand.
- An external survey with key stakeholders to obtain their views of IA is in development and will be launched in January 2019.

Delivery

- Agile:

IA conducted a benefits and challenges analysis and plans to audit three Agile projects in 2019.

IA have developed a roadmap and will be executing about 20 percent of the plan for Agile next year, which will result in approximately eight projects per quarter.

- Data Analytics:

IA conducted skills assessment, developed an inventory for data analytics and assigned a team to be responsible for those audits. IA has applied analytics to 50 percent of the audits throughout its 2018 Plan.

IA have developed a roadmap for continuous auditing. Working with IT, IA will be acquiring a data extraction tool to make sure that they are using the same tools used by IT.

- GRC Automation:

Risk Management and Internal Audit are working with Deloitte Consulting to develop hierarchy and content for the GRC system configuration. The goal is to start executing audit projects by the end of March 2019.

Innovation

- Innovation workstream was created to develop ideas to innovate Internal Audit operations in order to improve effectiveness and efficiencies.
- Workstream team members will create a database of innovative ideas, conduct research on Robotics Process Automation ("RPA") for Internal Audit processes, and develop methods to communicate its refreshed brand.
- The team has completed work on a staff timesheet design to capture audit project hours on a monthly basis. An RPA will also be developed with Deloitte Consulting for time aggregation and reporting.

Talent

- Three positions remain open: one Director, one Senior Auditor, and one Auditor. Active recruiting is in progress for all three positions.
- Two Senior Technology positions have been filled; this will round-out the Technology Audit team.
- One Business Senior Auditor will be joining NYPA in January 2019.

IA will continue to fill open positions and develop skill sets within the department.

President Quiniones added that Ms. Gonzalez and the IA team volunteered to be the lead on the Authority's Agile and Data Analytics processes. These processes will reduce cycle time and increase productivity. Other Business Units are going to be piloting and trained in those processes in 2019.

ii. **Canal Corporation Update**

2018 Audit Plan Status:

- Six Audits have been completed for Canals as of November 30, 2018.
- Reporting for the remaining audit is in progress and the report is expected to be issued by mid-December.

Status of Audit Recommendations:

- As of November 30, 2018, there are four, 2017 and eight, 2018 open recommendations, reaching 86% closure for 2017 and 60% for 2018, respectively.

The four remaining 2017 open recommendations have agreed-upon action plans. The Executive Management Committee approved extensions on the original due dates and are on track to close those open recommendations by mid-year 2019.

Internal Audit will continue to actively monitor remediation efforts with a focus on closing the 2017 open recommendations.

c. 2019 Audit Plan

Ms. Angela Gonzalez, Senior Vice President of Internal Audit, provided an update of the Internal Audit ("IA") 2019 Audit Plan to the Committee (Exhibit "5c i-A" (NYPA); and Exhibit 5c ii-A (Canals)).

i. New York Power Authority Audit Plan

The IA Plan is a well-defined Plan based on the audit universe by Business unit. The projects selected for the Plan are a subset of the audit universe based on audit risk ranking, the last audit date, and IA's resources.

The audit projects have been mapped through top enterprise risks, as well as the strategic initiatives. Any emerging risks that come up throughout the year will be addressed and, as business needs change, the Plan will be adjusted accordingly.

IA had key stakeholder input from the Executive Management, Direct Reports, Risk Management, and other Business Units.

Risk Assessment Process

The risk assessment process includes:

- Internal inputs – 2018 Audit Plan Results
- Key Stakeholders – information from 65 interviews with NYPA management; and
- External inputs - Benchmarking of where IA stand against its peers and other industry benchmarks.

Audit Universe Development

IA created a well-defined audit universe. IA developed a risk scoring model and conducted an historical analysis from 2014-2018. Based on the historical analysis of audit activities and risk assessment, and applying the risk scoring model, 205 audit entities have been identified by risk for NYPA (25 for Canals). Most of the entities fall into the "Medium Rated" risk category.

Audit Universe Cycle

In 2018, IA did some benchmarking with Gartner Audit Leadership Council and the results showed that about 46 percent of IA's peers use a five-year cycle to cover audit entities within an audit universe. In order for IA to cover all of the entities in the five-year cycle, it would need to execute 62 audits projects per year. This would result in a bias toward high and medium rated entities, and auditing low-rated entities on an "as-needed" basis. IA's benchmark also showed that about 45 percent of its peers are auditing low entities on an "as-needed" basis.

Based on the number of audit entities, the audit universe cycle has been defined as follows:

High: 1 - 2 years

Medium: 2 - 4 years; and

Low: 4 - 5 years

For the period 2014 to 2018, IA has completed 201 audits of which 147 were high; 31 medium, and 23 were not rated.

On average, IA has completed approximately 50 audits per year, given its resources. However, IA is projecting that this will increase over time.

IA has audited many of the high-rated areas. As business needs change and emerging risks presented, as part of IA's annual risk assessments, those entities will be evaluated and risk assessed to determine if the risk level has changed and audit coverage necessary.

Proposed 2019 Audit Plan Coverage

There are 41 projects in the proposed 2019 Audit Plan. Reduction of projects from 2018 to 2019 is due to the time allocated for designated staff to work on the e-GRC tool implementation, departmental staff training and learning curve to use the new system on audit projects and implementation of the Agile project methodology for 20% of the Audit Plan.

Proposed 2019 Audit Plan Risk Category Allocation

The higher percentage for operational audits is due to strategic initiatives in the Utility Operations and Technology Business Units and in alignment with industry best practices. However, the percentages for operational audits as risk as opposed to last year, is not significantly different and IA continues to cover financial, legal, and strategic Business Units.

Proposed 2019 Audit Plan Resource and Audit Type Allocation

Based on resource availability 41 projects are included in the Audit Plan.

Audit Resource Allocations are as follows:

- Actual Resource hours: 12,362 (Business) and 4,380 (Technology)
- Third-party hours: 950 (Business) and 1000 (Technology)
- Proposed 2019 Audit Plan Hours: 13,310 (Business) and 5,388 (Technology).
- Business Resource hours anticipates IA being fully staffed by mid-year.
- Third-party co-source hours will be for subject matter expertise, particularly in the utility operations side.
- Technology Resource hours includes co-source for the subject matter expertise. The hours have reduced from last year's due to audit coverage in key Technology areas.

Proposed 2019 Audit Plan Alignment

Approximately 80 percent of IA's projects in the Plan is in alignment with NYPA's Strategic Initiatives and top Enterprise Risks. Although there is a concentration on critical infrastructure failure, cyber security, and regulatory top enterprise risks, IA has concentration on the Asset Management Strategic Initiative, and of audits related to the Utility Operations' ISO 55,001 compliance framework.

Internal Audit Transformation Priorities and Key Departmental Initiatives

The four pillars for IA's transformational items for the department are as follows:

Branding

IA will be developing a communication strategy for a refreshed brand; change in mission, and objectives. IA's innovation team is working with NYPA Communications group to accomplish the brand refresh.

Delivery

- Agile: transformation roadmap will be rolled out - 20 percent of IA's Plan will be Agile projects.
- Data Analytics: moving towards continuous auditing.
- GRC Automation: working with Risk Management to develop implementation roadmap and to deploy the GRC tool.

- QAIP: IA is developing a QAIP program in alignment with IA standards. IA will be conducting its own internal assessment subsequent to having an external quality assessment.
- Innovation: IA plans to create a database for innovative ideas for internal audit processes.
- Talent: IA will be working with Human Resources to develop a formulized training program by skills levels - core, intermediate and advanced skills; internal external training and site visits. The talent model will continue the reorganization of the department to develop internal skills within NYPA and Canals.

Based on available resources, 41 audit projects have been identified by IA and review by the Executive Management Committee. IA is now seeking the Audit Committee's approval of the 2019 Audit Plan.

Upon motion made by member John Koelmel and seconded by member Tracy McKibben, the New York Power Authority's 2019 Audit Plan was unanimously approved.

ii. Canal Corporation Audit Plan

The 2019 Audit Plan represents the third year that the Canal Corporation will be under the purview of the Internal Audit function.

The proposed 2019 Audit Plan is fully developed and reflects the following:

- A defined risk-scored audit universe aligned by Business Unit. Audit entities that provide shared services to the Canal Corporation were included in the NYPA audit universe.
- Audit projects in the Plan are a subset of the audit universe selected based on audit risk ranking, last audit date, IA resources.
- Top Enterprise Risks as identified by Risk Management have been aligned to the Audit Plan.
- Emerging risks will be given appropriate consideration, and the Audit Plan will be adjusted as business needs change.
- Key stakeholder input/buy-in including input from Executive Management and various Risk Management and Business Units.

Risk Assessment Process

- Internal Inputs – 2018 Audit Plan Results
- Key Stakeholders – 11 Interviews with Canal Corporation’s management. This started in September 2018
- External Inputs – Gartner 2019 Hot Spots; NYPA IA and Industry Benchmarks
- Audit Universe Development – Audit Coverage; Risk Scoring Model; 32 Auditable entities defined
- Audit Projects based on available resources

Audit Plan Coverage

There are 8 projects in the proposed 2019 Audit Plan.

Comparison to prior Years

Audit projects decreased in 2018 due to the initiative for the Canal Corporation and NYPA staff to develop processes and procedures for key shared services functions.

Resource and Audit Type Allocation

Based on audit activities in 2017 and 2018 and development of the Canal Corporation Audit Universe, 2019 audits will focus on key business operations areas as follows:

Approximately 50 percent of the Plan is related to asset maintenance. IA will continue coverage of those areas deferred from last year including Permits Management

Internal Audit’s goal is to develop NYPA expertise for Canals’ business operations and processes and use co-source resources for subject matter expertise in future audits.

Resource Allocation

Actual Resource hours: 1,200 (Business) and 0 (Technology)

Third-party hours: 1,850 (Business) and 150 (Technology)

Proposed 2019 Audit Plan Hours: 3,050 (Business) and 150 (Technology).

2019 Audit Plan Alignment to Top Enterprise Risks

Audit Projects were aligned to the top four Canals Enterprise Risks (Attract and Retain Qualified Workforce; Critical Infrastructure; Organizational Integration and Practices and Public Health and Safety) and represents 63% of the Audit Plan.

Upon motion made by member John Koelmel and seconded by member Tracy McKibben, the Canal Corporation's 2019 Audit Plan was unanimously approved.

d. 2019 NYPA and Canal Corporation Internal Audit Budget

Ms. Angela Gonzalez, Senior Vice President of Internal Audit, provided an update of the Internal Audit ("IA") 2019 NYPA and Canal Corporation Internal Audit Budget to the Committee (Exhibit "5d-A" (NYPA); and Exhibit "5d-B" (Canals)).

Proposed 2019 Internal Audit Budget

Payroll, Benefits & Consulting – The components of payroll benefits and consulting reflect fulltime employee, benefits and consulting costs. This, however, will fluctuate, especially for co-source support for subject matter expertise, and assisting the department with Agile.

Software – Funds have been allocated for IA to purchase data extraction tools for data analytics purposes.

Training & Professional Fees – Reduction in the Training budget is due to in-house training conducted by NYPA's Technical Training Group.

Traveling Expenses & Miscellaneous – These budgets are materially and substantially the same as last year.

Upon motion made by member John Koelmel and seconded by member Tracy McKibben, the 2019 Internal Audit budget was unanimously approved.

e. Audit Plan Update - KPMG

Mr. Todd Fowler, KPMG's Lead Engagement Audit Partner, presented KPMG's Plan for the 2018 Financial Statement Audit (Exhibit 5e-A). He said that the Audit Plan constitutes the timing of KPMG's audit procedures, risk assessment, and how it plans to address those risks within the audit.

Mr. Fowler then outlined the client service team for the engagement adding that there were no changes in the engagement team for the audit. This includes the subcontractor and the MWBE firms that KPMG continue to use to meet the requirements within its contract and have built a strong relationship with over the last four years of their contract. This shows that there is continuity on the team.

Risk Assessment

Risk assessment identifies significant risks within the financial statements.

Relevant Factors affecting Risk Assessment:

Management Override of Controls

Management override of controls is a fraud risk that is present in all organizations, and not specific to the Authority. KPMG designed procedures to address management override of controls to specifically address this fraud risk. This is done by running data analytic routines over specific journal entries throughout the period to make sure that they identify any fraudulent activity in financial reporting.

Other Significant Areas:

Significant Estimates

Significant estimates are susceptible to management judgment and bias. This is where management could adjust the financial statements depending on how they choose.

Asset Retirement Obligation - an estimate of the removal cost is a significant estimate made by management.

Derivative valuations - the fair value of the derivative instruments used in financial reporting are susceptible to management bias.

Pension and post-retirement obligations - a valuation risk around the actuarial valuation, as well as investments in the fair value of investments.

With regard to the pension and post-retirement obligations, there was a new GASB standard, GASB 87, which is effective for the Authority in the current year. It relates to the fact that the Authority's OPEB assets are in a trust. Therefore, those OPEB assets and liabilities will be presented differently on the Authority's Balance sheets and there will be a separate disclosure that will be new in the current year.

Since the Authority have those assets in the trust, KPMG will issue a statement of fiduciary responsibility. This will be a new statement within the Authority's financial statements for the current year. KPMG is currently working with Authority staff to review those statements.

Significant Audit Areas

Significant audit areas have large balances within the Balance Sheet or P&L Statements and have a significant number of transactions running through the financial statements – Revenue Recognition; Long-term Debt; Investments, and Capital Assets. KPMG focused on those four areas and spent a significant amount of time on those areas.

Involvement of Others

As part of its audit, KPMG works closely with Ms. Angela Gonzalez and the Internal Audit team. They review the Internal Audit Plan, as well as all of the audit reports, to make sure that all of the risks identified in those reports are addressed by KPMG as part of the audit of the financial statements.

- Risk Analytics Valuation Specialists assist with testing the valuation of derivative instruments.
- National Pricing Desk assist with testing the valuation of investments; and
- Actuarial Specialists assist with the actuarial valuations of the pension and OPEBs.

Timeline for the Audit

The KPMG team is currently in the field performing interim test work. Risk assessment and planning are completed.

KPMG also plans to perform walk-throughs of the internal controls, testing entity-level controls, and preparing for a year-end audit, which will start in January.

KPMG will report to the Committee on any of the findings or the results of executing this Audit Plan and strategy.

KPMG Independence Quality Controls

KPMG maintains a comprehensive system of quality controls designed to maintain its independence and to comply with regulatory and professional requirements.

KPMG's Advisory team continues to assist NYPA's management with the integration of the Canal Corporation into NYPA and around the Human Resources function. KPMG also works closely with the advisory team to make sure that all the work that they are doing maintains their independence as the Authority's Auditor.

6. Next Meeting

Chairman Nicandri said that the next regular meeting of the Audit Committee would be held on March 26, 2019 at the Clarence D. Rappleyea Building in White Plains, New York at a time to be determined.

Closing

Upon motion made by member Tracy McKibben and seconded by member John Koelmel, the meeting was adjourned by the Chairman at approximately 9:59 a.m.

Karen Delince

Karen Delince
Corporate Secretary

December 11, 2018

EXHIBITS

For

Audit Committee

Minutes

December 11, 2018



**NY Power
Authority**

**Canal
Corporation**

NYPA | NYCC Risk Management

Soubhagya Parija

Chief Risk Officer, Senior Vice President

Completed Key Risk Management Projects

Business	Project	Business Unit Impacted	Value
NYPA and Canals	Updates to Incident Response Notification Management Guides	All	Greater emergency preparedness and resiliency
	Business Resiliency Stress Test Workshop	All	Validation of Business Resiliency
	Reputation Resiliency Program	All	Identification of Key Stakeholder Groups and response strategies
NYPA	NYPA Risk Workshops	All	Identification, assessment and communication of risks
	Portfolio Management/ECRMS Phase I	Commercial	Greater analytical capabilities and market insight to our commodity portfolio
	Contract review (DEP/EE)	Commercial	Potential exposure to NYPA assessed and quantified
	BG Bidding Strategy	Commercial	Optimize bidding strategy resulted in revenue enhancement
	Competitive Analysis	Commercial	Better position the Authority in evolving energy environment
	City of New York LTA for Port Authority/MTA	Commercial	Supported contract negotiation and helped to continue key customer relationship
	Owner Controlled Insurance Program - Phase I	Operations	Launched program to avoid cost and increase visibility into contractor insurance
	Business Resiliency Remote Access Test	Operations	Validated remote access abilities in the event of an emergency
	Workers Comp Annual Round Table Meeting	Operations	Workers Compensation and Safety knowledge sharing and issue discussion
Canals	Self Insured Canals – Workers' Compensation	Canals	Self insured Canals Workers Compensation Program it maximize savings
	Canals Risk Workshops	Canals	Identification, assessment and communication of risks
	Canals Property Insurance	Canals	Purchase of Canals Property Insurance coverage for additional protection
	Business Continuity Plan (BCP) for Canals	Canals	Establishment BCPs for greater emergency preparedness and resiliency
	Canals Critical Asset Budget Review	Canals	Confirmation that most critical assets were being for and addressed

Risk Management and Internal Audit Alignment



Risk Management and Internal Audit at NYPA

Risk Management

Identify

- Cross functional workshops
 - Audit participation
- Surveys
- External Sources and Industry Groups

Assess

- Risk Score
 - Impact, Likelihood and Velocity
- Risk Drivers

Respond

- Risk Responses
- Collaboration with other teams to address risks

Report

- Workshop participants
- Executive Risk Management Committee
- Board of Trustees

Key Risk Management and Internal Audit Activities:

- Mapping of Annual Internal Audit Plan Activities to Enterprise Level Risks
- Jointly owned eGRC Tool System
 - Centralized risk repository for Risk Management and Internal Audit data
- Collaboration on key Risk Management projects

Internal Audit

- Execute the risk-based audit plan
- Identify deficiencies in controls, and effectiveness and efficiency improvement opportunities
- Track open observations until closure and report to EMC.
- e-GRC tool will provide real-time risk updates from audit observations to top enterprise risks.



**NY Power
Authority**

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Corporation**

Audit Committee

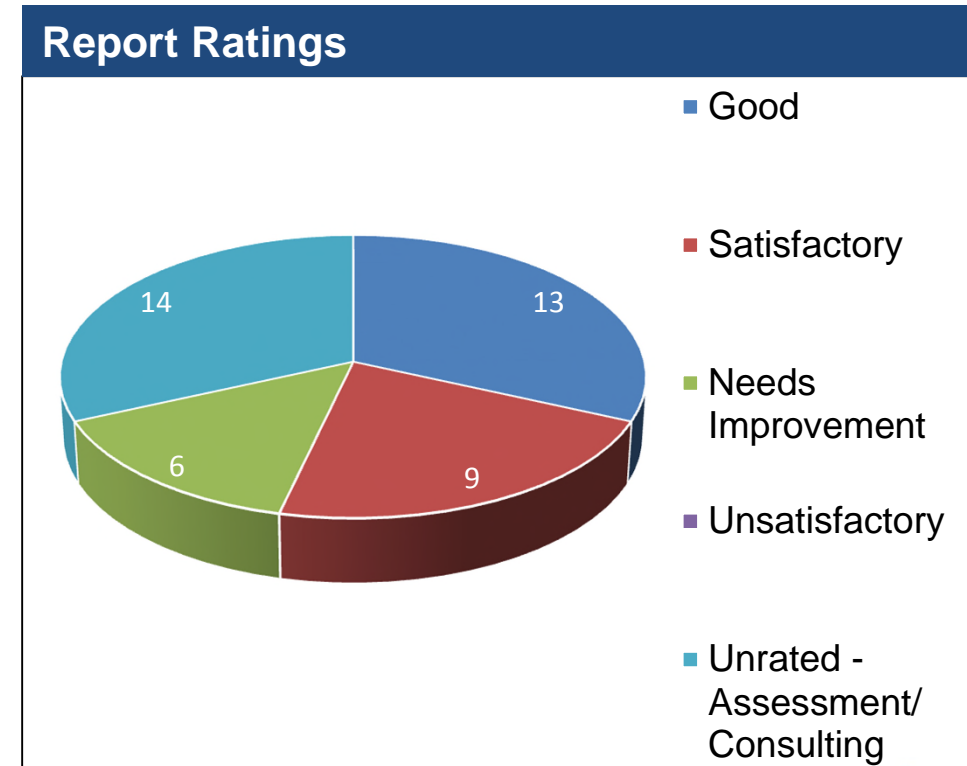
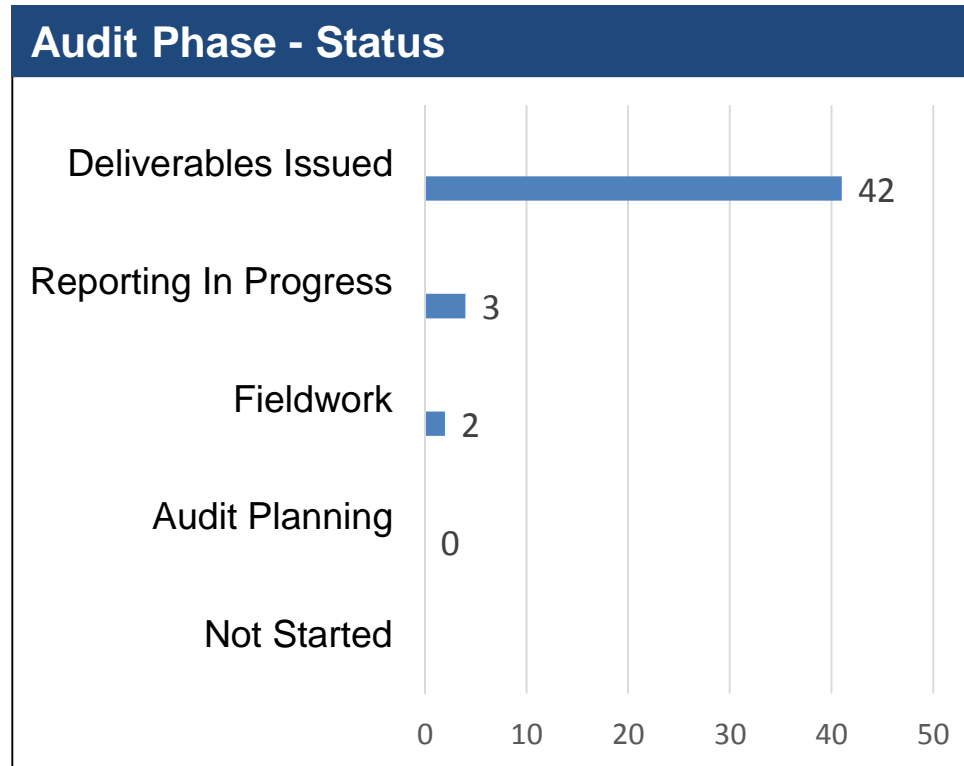
2018 Internal Audit Activity Report – NYPA

12/11/2018

2018 Status Update NYPA

2018 Audit Plan Status

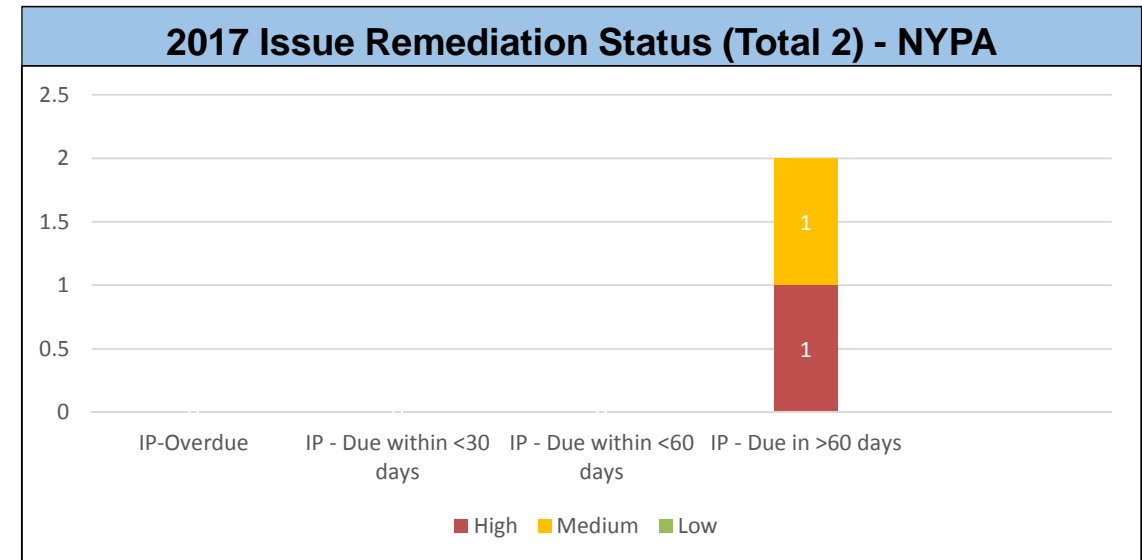
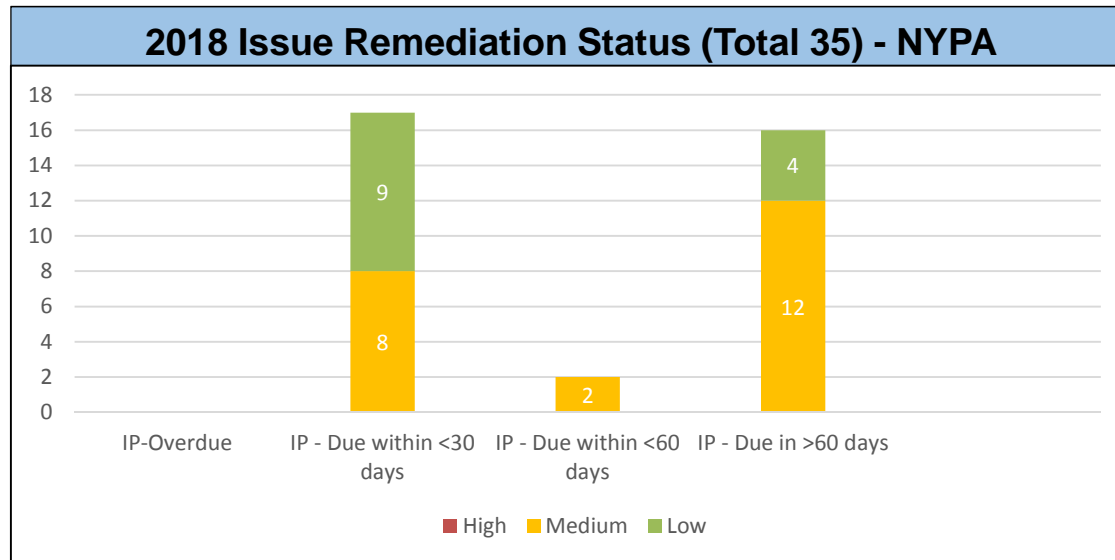
- 2018 Plan Status:
 - 42 deliverables have been issued that are associated with 47 audit projects (including 31 reports and 11 memos) as of 11/30/18. Total 2018 deliverables for NYPA will be 47 reports and memos.*
 - Reporting for the remaining five audits will be completed by 12/14/18 and are expected to be issued by the end of December.



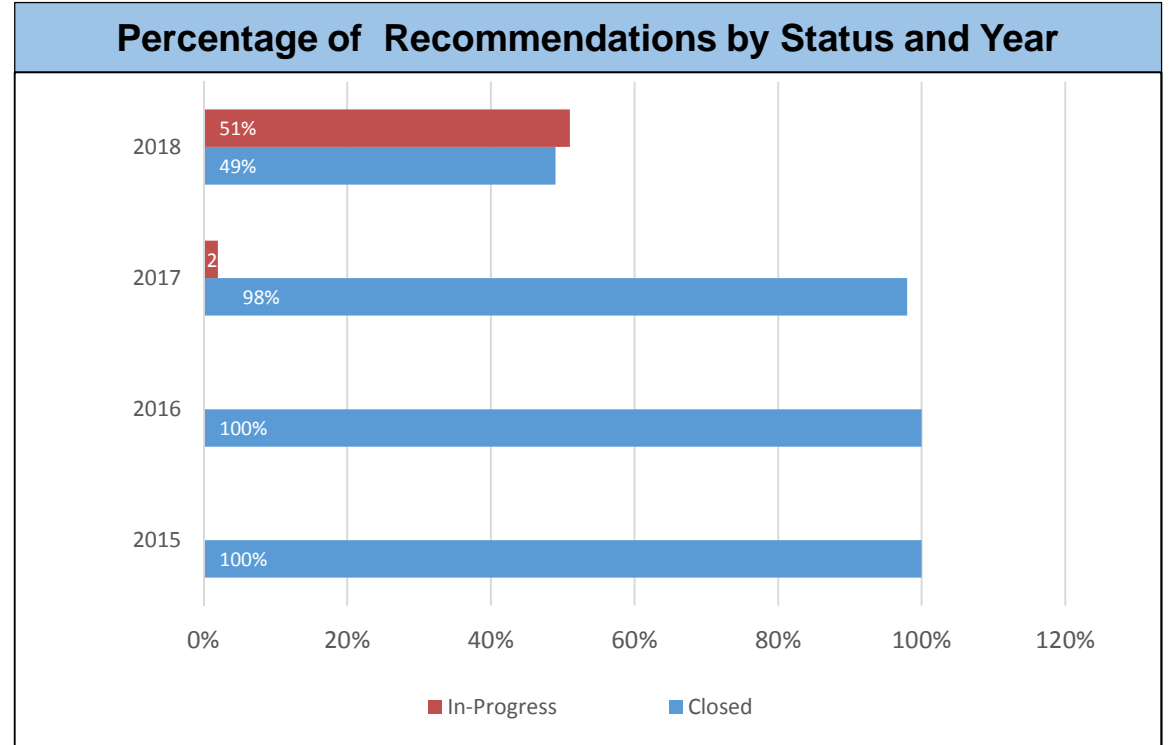
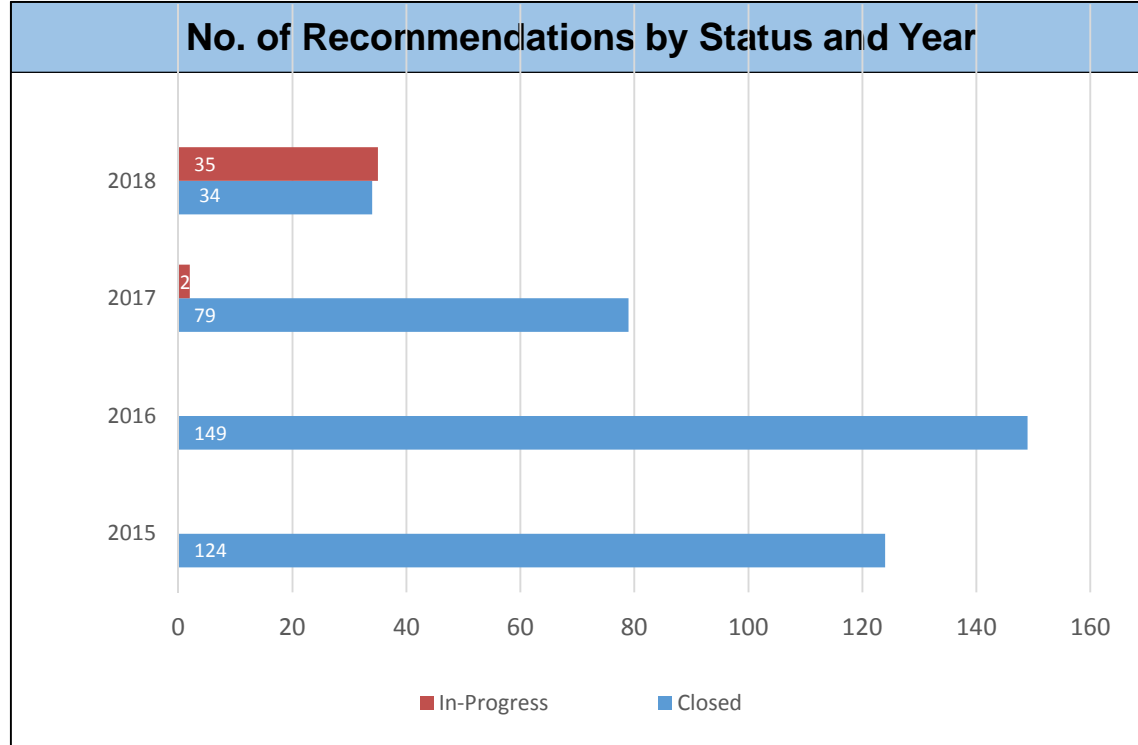
*See Appendix A for the details of the audit projects.

Status of Audit Recommendations

- As of November 30, 2018, there are two 2017 and 35 2018 open recommendations, reaching 98% closure for 2017 and 49% for 2018, respectively as shown in slide 5. The two remaining 2017 open recommendations have agreed upon action plans, EMC approved extensions or original due dates and are on track to close by mid-year 2019.
- Internal Audit will continue to actively monitor remediation efforts with a focus on the remaining open recommendations.



Status of Audit Recommendations



Internal Audit Transformation Priorities – Key Accomplishments

Branding (Internal and External)

- Obtained survey results from staff on ideas for refreshing Internal Audit's brand. Internal Audit leadership reviewed the results.
- Survey to key stakeholders to obtain their view of Internal Audit is in development and will be launched in January 2019.

Delivery

- Agile: See slides 7 and 8 for details of the Agile journey and highlights.
- Data Analytics: See slides 9 and 10 for details of the Data Analytics journey and highlights.
- GRC Automation: Contract signed with Archer. Risk Management and Internal Audit working with Deloitte Consulting to develop hierarchy and content for system configuration. Archer to be onsite in Q1 2019.

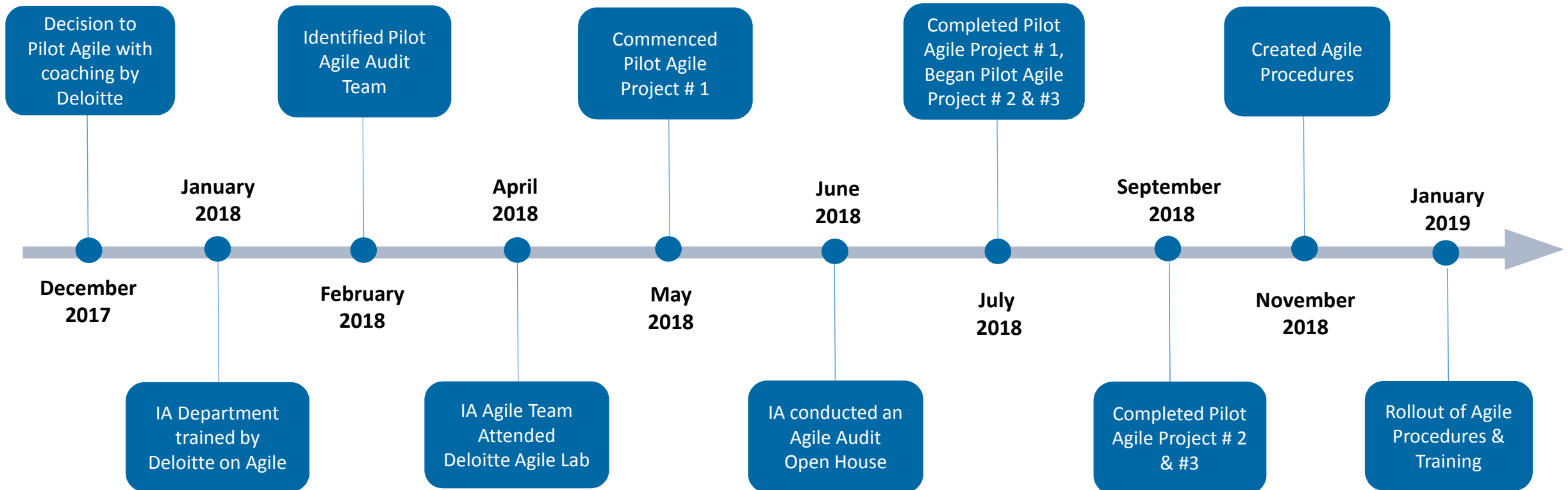
Innovation

- Innovation workstream was created to develop ideas to innovate Internal Audit operations to improve effectiveness and efficiencies.
- Workstream team members will create a database of innovative ideas, conduct research on Robotics Process Automation (RPA) for Internal Audit processes, develop methods to communicate refreshed brand and others.
- The team has completed work on staff timesheet design to capture audit project hours monthly. Developing an RPA with Deloitte for time aggregation and reporting.

Talent

- Three positions remain open: one Director, one Senior Auditor, and one Auditor. Active recruiting is in progress for all three positions.
- Filled two Senior Technology positions to round out the Technology Audit team and one business Senior Auditor position will be joining NYPA in January 2019.

Agile Project Methodology 2018 Timeline



Agile Project Methodology – Highlights

Process Enhancements

- Increased stakeholder involvement and collaboration during all phases of the audit.
- Improved time management.
- Daily discussions on project progress/ Bi-weekly discussion on audit scope and refinement.
- Timely resolution on project obstacles.
- Auditor empowerment and accountability.
- Just-in-time remediation opportunities for stakeholders.

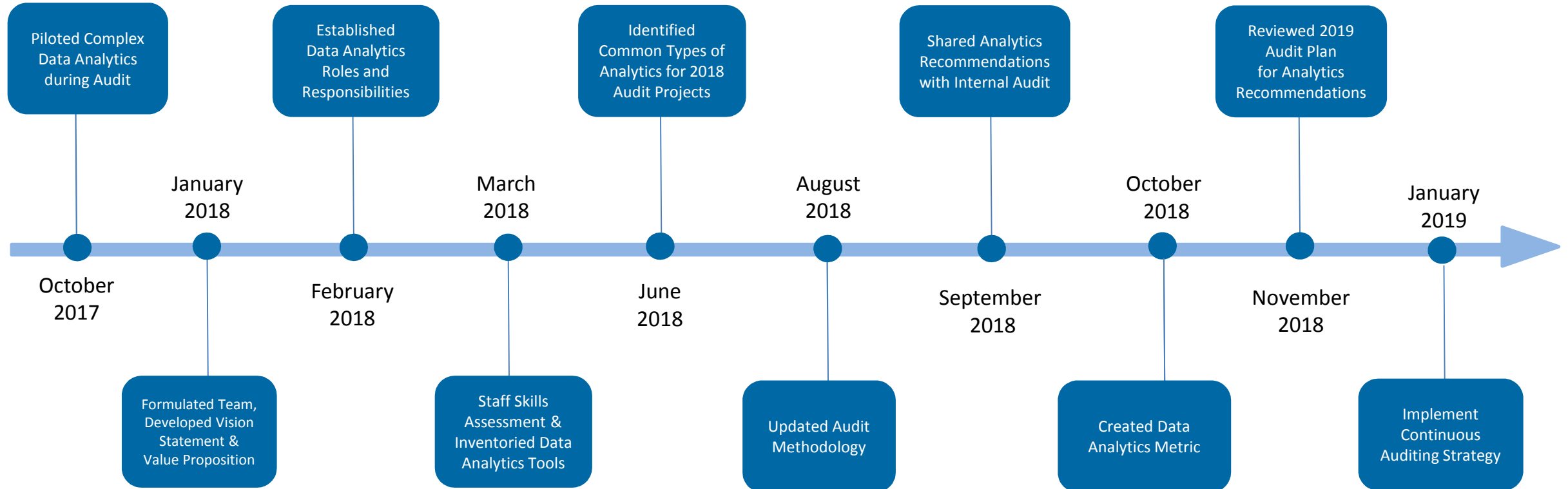
Challenges Encountered

- Adjusting some aspects of the traditional audit methodology to the Agile approach (control walkthroughs, risk challenge sessions with Internal Audit leadership).
- Initial client resistance until they could see the benefits.

Go Forward

- From discussions with the Agile team and Internal Audit leadership, the benefits outweighed the challenges encountered and the decision was made to implement Agile as a project methodology for the department.
- The Agile team has developed detailed procedures for this methodology and training will be given to the Internal Audit staff in January 2019 by the team and a Deloitte Agile coach. A roadmap for Agile deployment in 2019 has been developed.

Data Analytics 2018 Timeline



Data Analytics – Highlights

Process Enhancements

- Audit teams are engaging the Data Analytics team during pre-planning to discuss where data analytics could be performed to test controls and during fieldwork as testing is in progress.
- Metrics have been developed to determine the percentage of data analytics applied to audits. To date, 21 out of 47 (48%) 2018 audit projects (for NYPA only) have been identified where data analytics could be applied. 18 out of the 21 (85%) audits have been completed using data analytics and the remaining three audits are expected to use data analytics.

Challenges Encountered

- Extracting data from the various systems to analyze in Excel.
- Leveraging data analytics tools from IT.
- Audit teams did not engage the Data Analytics team initially until roles and responsibilities of the team were defined and expectations set.

Go Forward

- A roadmap for Data Analytics in 2019 has been developed focusing on developing continuous auditing routines for key business areas, obtaining a data extraction tool and training staff on Tableau, a data visualization tool.

Appendix

Appendix A - 2018 Audit Plan Status

Ref	Entity	Audit Project Number	Audit	Business Unit	Audit Type	Report Rating	Date Issued
Deliverable Issued: 42							
1	NYPA	2018-AU-03	Vegetation Management	Utility Operations	Audit	Good	3-08-18
2	NYPA	2018-AU-50	Customer Revenues – Hydro Billing	Business Services	Audit	Good	3-19-18
3	NYPA	2018-AU-01	RNY – Customer Compliance Audits	Commercial Ops & Energy Solutions	Audit	N/A	3-27-18
4	NYPA	2018-AU-30	Threat and Vulnerability Management	Information Technology	Audit	Needs Improvement	3-29-18
5	NYPA	2018-AU-25	SAP Basis Administration	Information Technology	Audit	Satisfactory	3-30-18
6	NYPA	2018-AU-38	Work Breakdown Structure (WBS) Code Governance	Entity-Wide	Audit	Satisfactory	4-18-18
7	NYPA	2018-AU-06	Capital Asset Management	Entity-Wide	Audit	Satisfactory	4-27-18
8	NYPA	2018-AU-12	New York City Governmental Customers Contract Compliance	Marketing & Legal	Audit	Good	5-04-18
9	NYPA	2018-AU-29	Third Party Contract Audit - Ferguson	Entity-Wide	Audit	Good	5-25-18
10	NYPA	2018-AU-34	Data Center Operations	Information Technology	Audit	Good	6-14-18
11	NYPA	2018-AU-11	Western NY Customer Compliance Audit (D&M)	Commercial Ops & Energy Solutions	Audit	N/A	6-28-18
12	NYPA	2018-AS-39	Enterprise Portfolio Management Design Assessment	Entity-Wide	Assessment	N/A	6-18-18
13	NYPA	2018-AU-19	Mobile Device Security	Information Technology	Audit	Needs Improvement	6-27-18
14	NYPA	2018-AU-07	Ariba Post Implementation	Business Services	Audit	Good	6-28-18
15	NYPA	2018-AU-63	Contingent Staffing Vendor Compliance	Entity-Wide	Audit	Good	6-29-18
16	NYPA	2018-AU-62	Third Party Contract Audit – Aecom	Entity-Wide	Audit	Good	6-29-18
17	NYPA	2018-AU-41	Travel & Expense Review	Business Services	Audit	Needs Improvement	7-20-18
18	NYPA	2018-AU-31	Virtualized Computing	Information Technology	Audit	Satisfactory	7-24-18
19	NYPA	2018-AU-35	Payroll Follow-up	Business Services	Audit	Needs Improvement	7-25-18
20	NYPA	2018-AU-37	Customer Meter to Cash – Follow Up	Business Services	Audit	Satisfactory	8-15-18
21	NYPA	2018-AU-13	Customer Data Protection	Entity-Wide	Audit	Good	8-30-18
22	NYPA	2018-AU-47	Energy Commodity Risk Management System Implementation – Phase 1 and 2 – Memo	Risk Management	Audit	N/A	8-31-18
23	NYPA	2018-AU-05	Maximo Asset Management Application Review	Utility Operations	Audit	Good	9-05-18
24	NYPA	2018-CS-21	New York Energy Manager – Business Processes	Commercial Ops & Energy Solutions	Consulting	N/A	9-13-18
25	NYPA	2018-AU-28	Success Factors Post Implementation	Human Resources & Enterprise Shared Svcs.	Audit	Good	9-17-18
26	NYPA	2018-AU-20	Network Administration	Information Technology	Audit	Satisfactory	9-26-18
27	NYPA	2018-AS-36	Strategic Supply Management (SSM) Operating Model Assess.	Business Services	Assessment	N/A	9-26-18

2018 Audit Plan Status

Ref	Entity	Audit Project Number	Audit	Business Unit	Audit Type	Report Rating	Date Issued
28	NYPA	2018-AU-48	Dodd Frank Compliance	Commercial Ops & Energy Solutions	Audit	Needs Improvement	9-28-18
29	NYPA	2018-AU-17	Treasury Operations	Business Services	Audit	Satisfactory	9-28-18
30	NYPA	2018-CS-14	Customer Energy Solutions Redesign Support	Commercial Ops&Energy Solutions	Consulting	N/A	10-02-18
31	NYPA	2018-AU-43	Social Media	Corporate Affairs	Audit	Needs Improvement	10-08-18
32	NYPA	2018-AU-22	Niagara SCADA Upgrade	Utility Operations	Audit	Good	10-29-18
33	NYPA	2018-CS-04	AGILe Strategic Initiative	Entity-Wide	Consulting	N/A	11-06-18
34	NYPA	2018-AU-45	Non-Purchase Order (Non-PO) Process	Business Services	Audit	Good	11-07-18
35	NYPA	2018-CS-46	Integrated Smart Operations Center (iSOC)	Entity-Wide	Consulting	N/A	11-15-18
36	NYPA	2018-AU-32	Sustainability Program Support	Entity-Wide	Consulting	N/A	11-15-18
37	NYPA	2018-AU-26	Cyber Security Policy Compliance	Entity-Wide	Audit	Satisfactory	11-20-18
38	NYPA	2018-AU-40	Bid to Bill System Implementation	Commercial Ops & Energy Solutions	Audit	N/A	11-21-18
39	NYPA	2018-AS-16	Operations Technology Disaster Recover (DR)	Utility Operations	Assessment	N/A	11-27-18
40	NYPA	2018-CS-15	Cyber Security Roadmap Consulting Support	Information Technology	Consulting	N/A	11-28-18
41	NYPA	2018-AU-64	Medical & Dental Benefits Administration	Human Resources & Enterprise Shared Services	Audit	Satisfactory	11-30-18
42	NYPA	2018-AS-33	Systems Development Lifecycle (SDLC) Governance	Information Technology	Assessment	N/A	11/30/18
Reporting – Fieldwork Complete: 3							
43	NYPA	2018-AU-18	IT Disaster Recovery (DR)	Information Technology	Audit		
44	NYPA	2018-AU-23	Remote Access	Information Technology	Audit		
45	NYPA	2018-AU-27	Expenditure Authorization Procedure (EAP)	Business Services	Audit		
Fieldwork in Progress: 2							
46	NYPA	2018-AU-44	Fleet Management Operations	Human Resources & Enterprise Shared Services	Audit		
47	NYPA	2018-AU-02	Northern NY Power Proceeds	Commercial Ops & Energy Solutions	Audit		
Audit Planning In Progress: 0							
Planning Not Started: 0							



**NY Power
Authority**

**Canal
Corporation**

Audit Committee

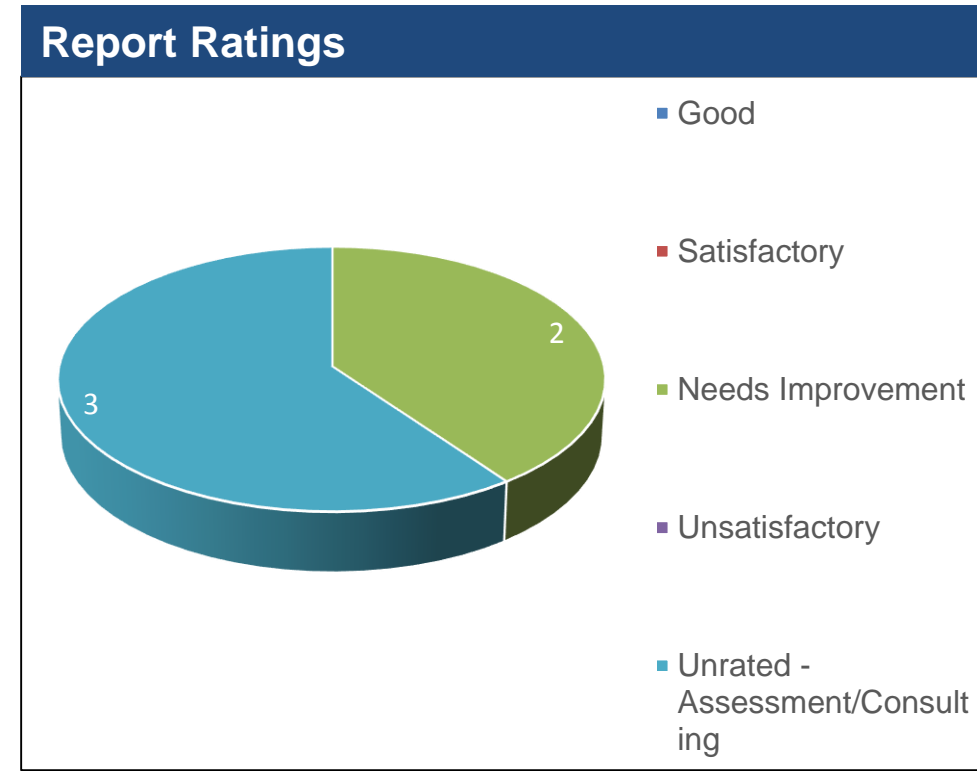
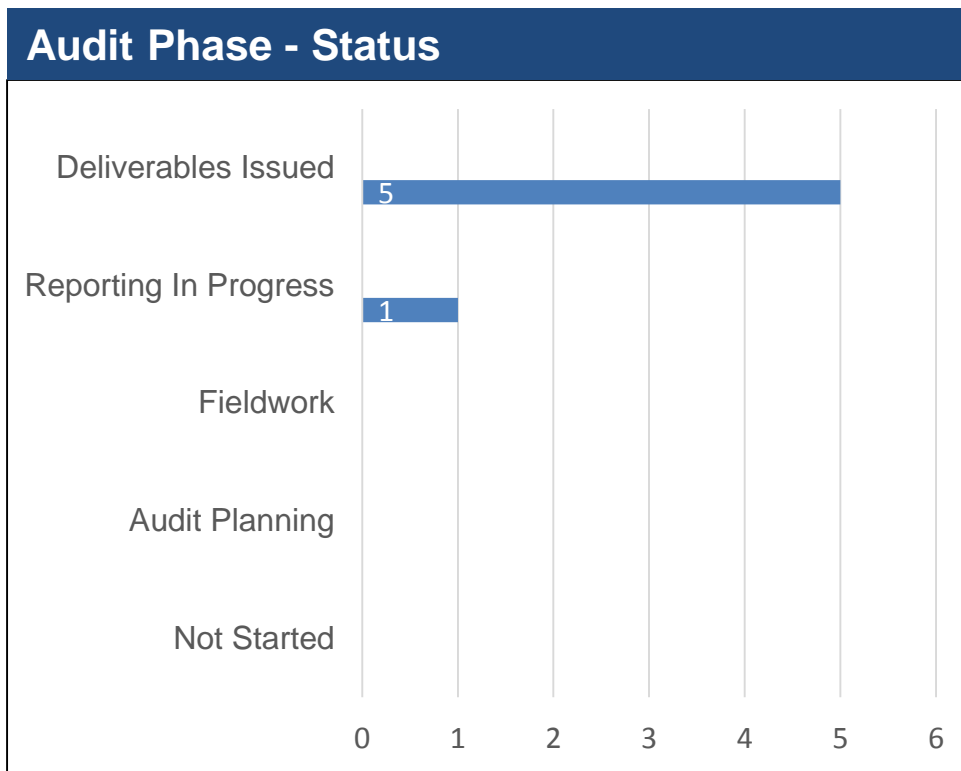
2018 Internal Audit Activity Report – Canal Corporation

12/11/2018

2018 Status Update Canal Corporation

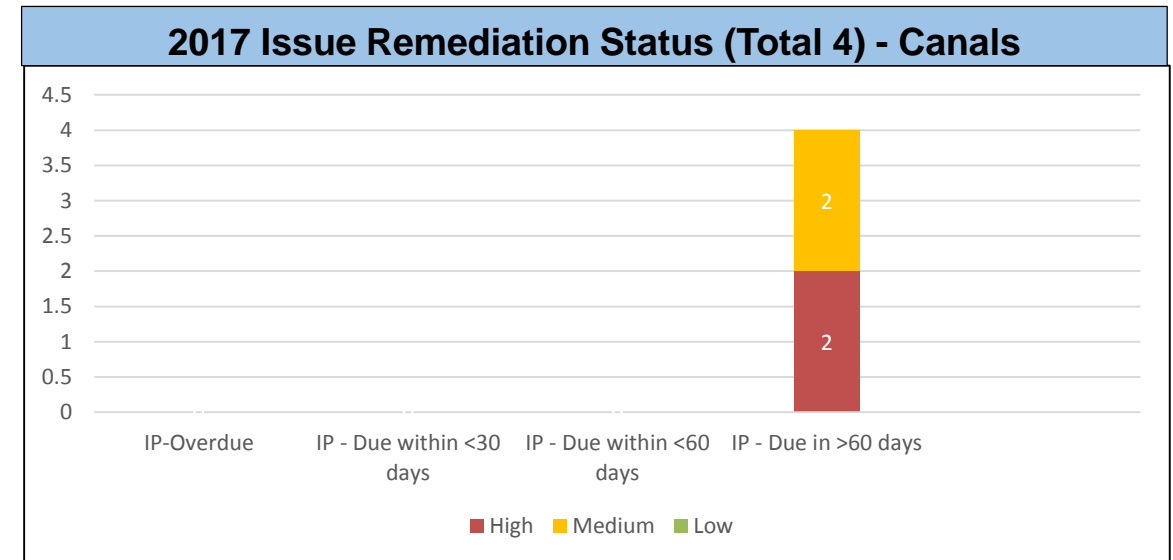
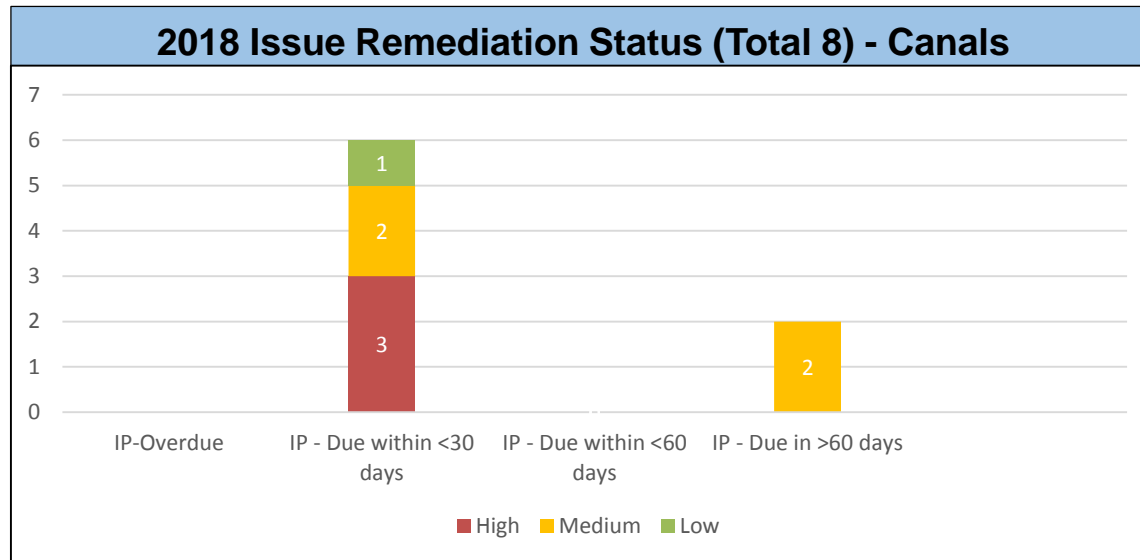
2018 Audit Plan Status

- 2018 Plan Status:
 - Five (5) deliverables have been issued as of 11/30/18.
 - Reporting for the remaining audit is in progress and the report is expected to be issued by mid-December. See Appendix for list of audits.

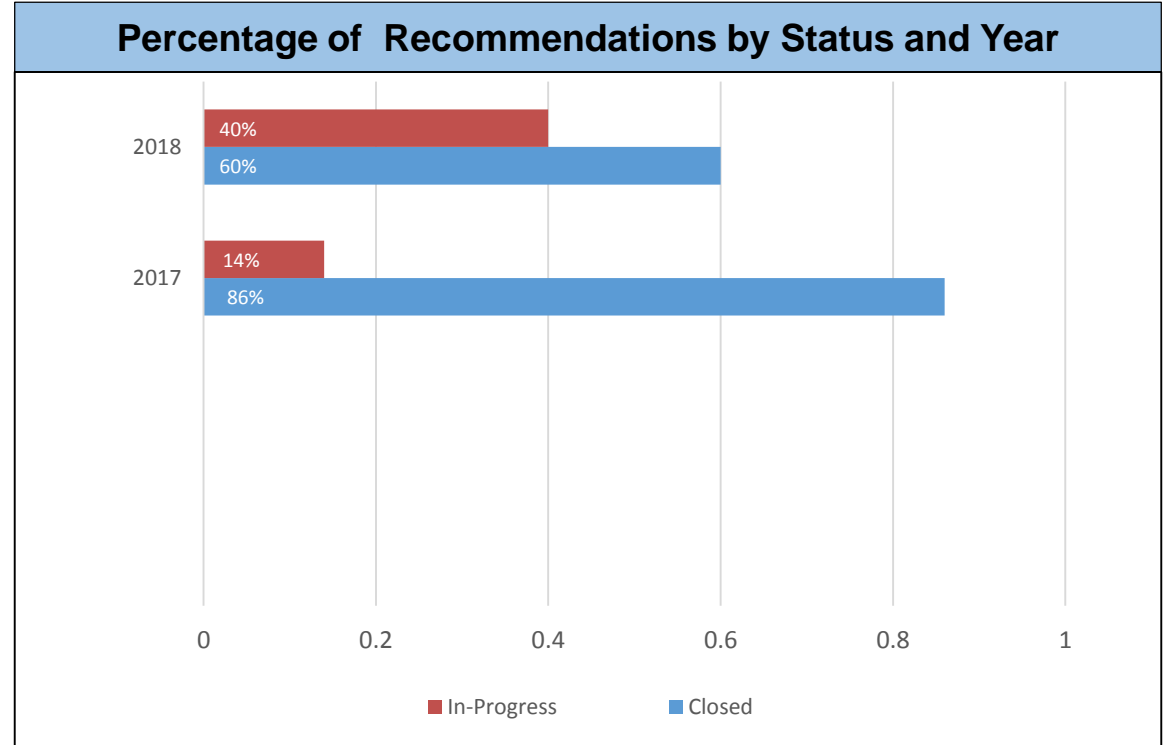
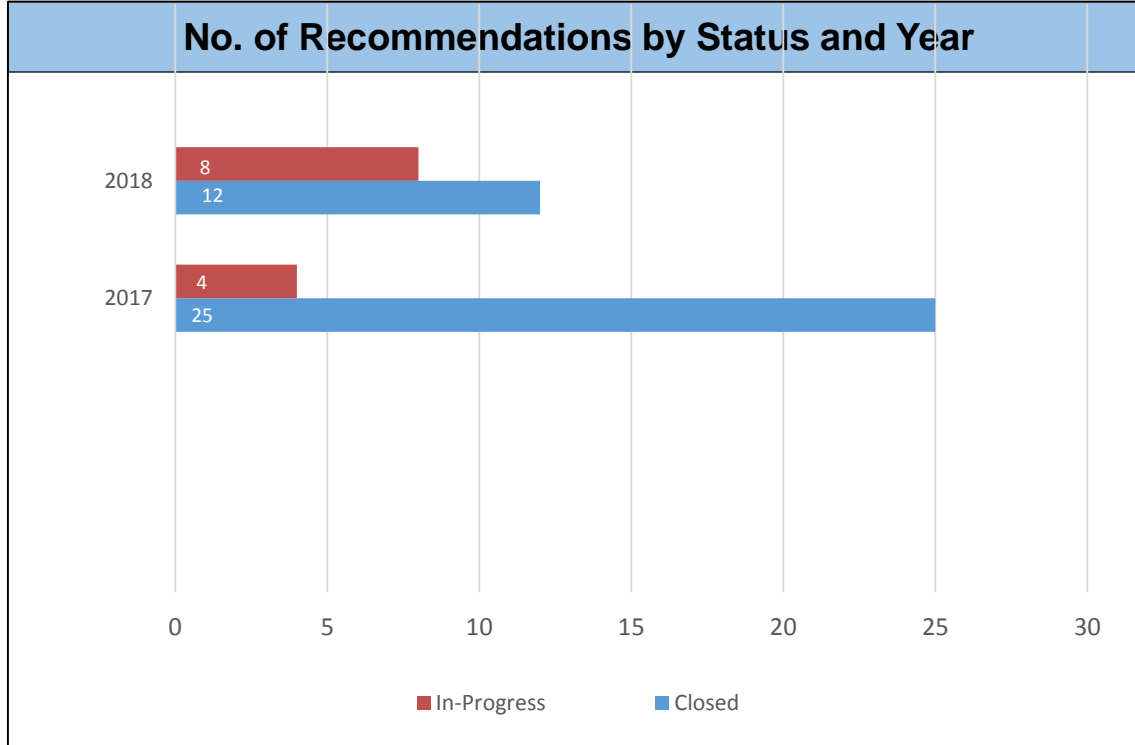


Status of Audit Recommendations

- As of November 30, 2018, there are four 2017 and eight 2018 open recommendations, reaching 86% closure for 2017 and 60% for 2018, respectively as shown in slide 5. The four remaining 2017 open recommendations have agreed upon action plans, EMC approved extensions or original due dates and are on track to close by mid-year 2019.
- Internal Audit will continue to actively monitor remediation efforts with a focus on 2017 open recommendations.



Status of Audit Recommendations



Appendix

Appendix A - 2018 Audit Plan Status

Ref	Entity	Audit Project Number	Audit	Business Unit	Audit Type	Report Rating	Date Issued
Deliverable Issued: 5							
1	Canals	2018-AS-51-C	Canals Crisis Management	Utility Operations	Assessment	N/A	4-20-18
2	Canals	2018-AU-57-C	Payroll	Business Services	Audit	Needs Improvement	4-27-18
3	Canals	2018-AU-61-C	Vendor Payment Accruals	Business Services	Audit	Needs Improvement	6-29-18
4	Canals	2018-AU-54-C	Grants and Sponsorships	Corporate Affairs	Assessment	N/A	8-3-18
5	Canals	2018-AS-58-C	Dam Safety	Utility Operations	Audit	N/A	8-15-18
Reporting – Fieldwork Complete: 1							
6	Canals	2018-AS-53-C	EH&S Assessment	Utility Operations	Assessment		
Fieldwork in Progress: 0							
Audit Planning In Progress: 0							
Planning Not Started: 0							



**NY Power
Authority**

**Canal
Corporation**

Audit Committee

2019 NYPA Internal Audit Plan

12/11/2018

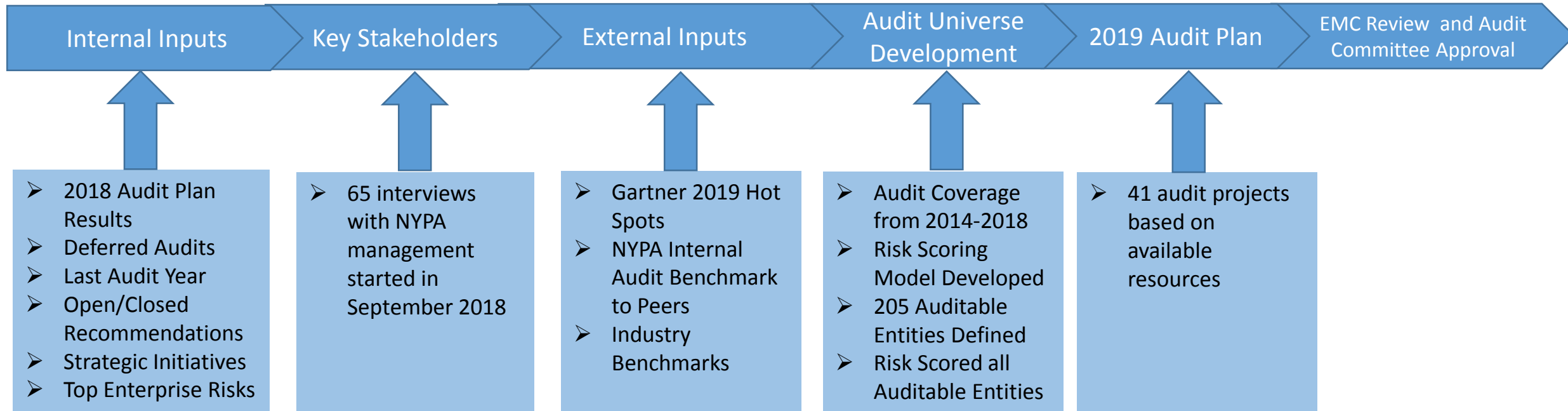
Executive Summary

Annual Audit Plan

The proposed 2019 Audit Plan is fully developed and reflects the following:

- A defined and risk-scored Audit Universe aligned by business unit.
- Audit projects in the plan are a subset of the Audit Universe selected based on audit risk ranking, last audit date, IA resources.
- Top Enterprise Risks as identified by Risk Management and NYPA's strategic initiatives have been aligned to the audit plan.
- Emerging risks will be given appropriate consideration and the audit plan will be adjusted as business needs change.
- Key stakeholder input from Executive Management and various Risk Management and Business Units.
- Internal Audit requests that the Audit Committee approve the 2019 NYPA Internal Audit Plan.

Risk Assessment Process



Audit Universe Development

- 237 audit entities have been identified for the NYPA and Canal Corporation Audit Universe (*205 NYPA, 32 Canal Corporation) based on historical analysis of previous audit activity, an assessment of risks within business operations and applying a risk scoring model. The breakdown of the audit entities by risk are as follows:

NYPA Audit Entities		Canals Audit Entities	
High Rated:	47	High Rated:	9
Medium Rated:	118	Medium Rated:	17
Low Rated	<u>40</u>	Low Rated:	<u>6</u>
Total	205	Total	32

Audit Universe Cycle

2018 Gartner Audit Leadership Council benchmarks for audit cycles show 46% of audit organizations use a five year cycle to cover audit entities within an audit universe. To cover the 237 audit entities for the five year cycle, it would require Internal Audit to execute approximately 62 audit projects per year. This would include a bias towards high and medium rated entities and auditing low rated entities as needed. 2018 Gartner Audit Leadership Council benchmarks also show that the majority of Internal Audit organizations (45%) audit low rated entities on an as needed basis.

The audit universe cycle that has been defined based on the number of audit entities is as follows:

High	12 to 24 Months	1-2 years
Medium	24 to 48 Months	2-4 years
Low	48 to 60 Months	4-5 years

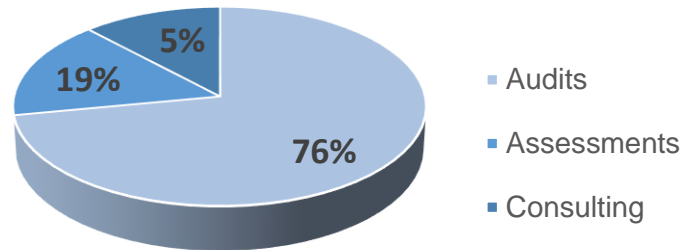
Since 2014, Internal Audit has completed 201 audits, of which 147 were high rated, 31 were medium rated, and 23 were not rated. (See Appendix A for Audit Coverage details). On the average, Internal Audit has been completing 50 audits per year, and this number is projected to increase as Internal Audit becomes fully staffed. Internal Audit has a level of comfort that many of the high rated entities have been reviewed since 2014. As business needs change, emerging risks are presented, and as part of the annual risk assessment, these entities will be evaluated to determine if the risk level has changed and audit coverage is needed.

*See Appendix B for the NYPA Audit Universe details. The Canal Corporation Audit Universe is located in the Canal Corporation 2019 Audit Plan presentation.

Proposed 2019 Audit Plan Coverage

2019 Planned Activities

41 projects in the Proposed 2019 Audit Plan *



Comparison to Prior Years

	2019 Plan	2018 Actual	2017 Actual
Assessments	8	4	8
Audits	31	37	21
Consulting	2	6	5
Total	41	47	34

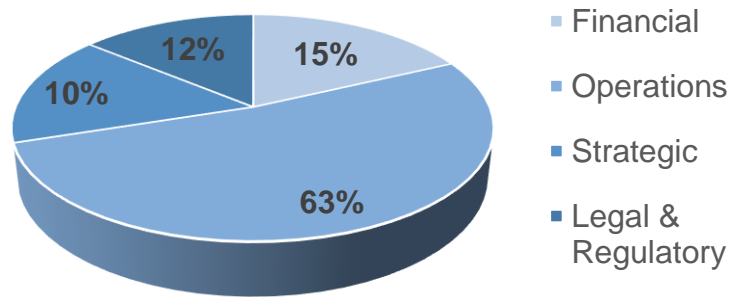
- Audits, Assessments and Consulting audit projects for 2019 are based on full staff by end of Q2 2019. Co-source partner will supplement staff as needed until open positions are filled and provide subject matter expertise.
- Reduction of projects from 2018 to 2019 is due to the time allocated for designated staff to work on the e-GRC tool implementation, departmental staff training and learning curve to use the new system on audit projects and implementation of the Agile project methodology for 20% of the audit plan.

*See Appendix C for the Proposed 2019 Audit Plan and Appendix D – Supporting Information for Q1 audit projects

Proposed 2019 Audit Plan Risk Category Allocation

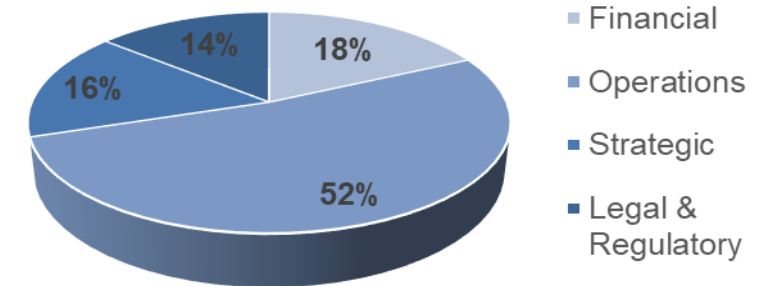
2019 Plan Allocation

➤ Allocation by Risk Category



2018 Plan Allocation

➤ Allocation by Risk Category



2019 Audit Plan

- The allocation of audit projects by risk category does not materially deviate from the 2018 actual allocation.
- Higher percentage for operational audits is due to strategic initiatives in the Utility Operations and Technology business units and in alignment with industry best practices.

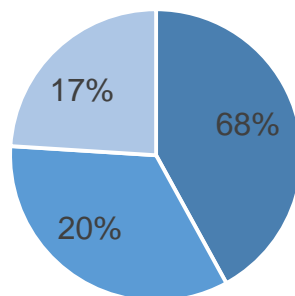
Proposed 2019 Audit Plan Resource and Audit Type Allocation

41 projects are included in the Audit Plan based on Resource Availability

Resource Allocation	Business	Technology
Actual Resource hours available	12,360*	4,388
Budgeted Third Party hours available	950	1,000
Proposed 2019 Audit Plan Hours	13,310	5,388

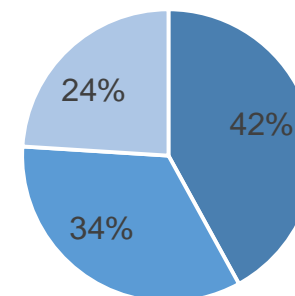
* Hours include full staff by end of Q2 2019 equating to 2,500 available audit hours. Third party co-source business hours are for subject matter expertise. For technology, the third party co-source hours are for subject matter expertise and some staff augmentation. (See Appendix E – Audit Plan Internal Resource Allocation).

Types of Audits – 2019



■ Business ■ Technology ■ Integrated

Types of Audits – 2018



■ Business ■ Technology ■ Integrated

Decrease in technology audits due to audit coverage in key technology areas from 2016 – 2018. Decrease in integrated audits due to less number of audit projects compared to 2018. Integrated audits allow Internal Audit to look at business and technology controls in coordination to provide full view of processes leading to increased efficiencies and value of audits.

Proposed 2019 Audit Plan – Alignment

88% of the projects in the Plan directly align to either a Strategic Initiative, Top Enterprise Risk, or both. See Appendix D for list of projects.

Top Enterprise Risk	# of Projects	Strategic Initiative	# of Projects
Attract & Sustain Qualified Workforce	1	Asset Management	8
Commodity Market Volatility	3	Customer Solutions	3
Critical Infrastructure Failure/Catastrophic Event	7	Knowledge Management	1
Customer Energy Choices	3	Process Excellence	3
Cyber Security	5	Smart Generation & Transmission	2
Data Governance & Management	1	Workforce Planning	1
Disruptive Innovation	2		
Hydro Flow Volumes	0		
Regulatory & Legislative Environment	5		
Sustained Low Energy Prices	2		
Third Party Management	4		

Internal Audit Transformation Priorities and Key Departmental Initiatives

Branding (Internal and External)

- Communications strategy for refreshed brand will be developed once brand is decided.
- Refresh of Vision, Mission and Objectives will coincide with brand refresh.
- Innovation Work stream team members will work with NYPA Communications on the brand refresh.

Delivery

- Agile: See slide 10 for details of the Agile roadmap.
- Data Analytics: See slide 11 for details of the Data Analytics roadmap.
- GRC Automation: Work with Risk Management and Archer to develop implementation roadmap, deploy the GRC tool. Staff are assigned.
- QAIP: Program is in development in accordance with IIA Standards, will conduct an internal assessment in 2019 to prepare for an external quality assessment.

Innovation

- Work stream team members will work on creating a database of innovative ideas, conduct research on Robotics Process Automation for Internal Audit processes and gather internal input to see where efficiencies in the audit process are needed.
- Internal Audit staff will be assigned projects for this work stream as needed.

Talent

- Training Program: Developing a formalized training program by skill levels: Core, Intermediate and Advanced skills including internal and external training, site visits. Will obtain input from HR on development.
- Talent Model: Continue to complete the restructure of the department to build expertise in NYPA and Canals' business operations and recruiting.
- Staff Development: Continue to enhance and monitor development plans for each team member to reach their development goals.

Agile Transformation Roadmap

	Y1 - 2018	Y2 - 2019		Y3 - 2020		Y4 - 2021	
	Q1 - Q4	Q1/Q2	Q3/Q4	Q1/Q2	Q3/Q4	Q1/Q2	Q3/Q4
Internal Audit Leadership	<ul style="list-style-type: none"> Identified and Oversaw Three Pilot Agile Audits <ul style="list-style-type: none"> Pilot Agile Audits <ul style="list-style-type: none"> Identified need for Agile IA and coaching Selected Deloitte to support Agile roll-out Trained IA Department Selected Three Pilot Audit Projects Identified Pilot Audit Teams Supported Agile IA Procedures and Training 	<ul style="list-style-type: none"> 20% of Audit Projects Identified Eight for Agile Methodology Ensure all IA staff work on an Agile Audit <ul style="list-style-type: none"> Roll-out of Agile IA in 2019 Support Agile IA Training <ul style="list-style-type: none"> Identify Agile IA teams Support Agile IA Procedures roll-out and Training Finalize operating model details 		<ul style="list-style-type: none"> 66% of Audit Projects using Agile Methodology 		<ul style="list-style-type: none"> 100% of Audit Projects using Agile Methodology Agile IA Transformation Complete 	
Internal Audit Staff	<ul style="list-style-type: none"> Wave 1: Pilot Agile IA <ul style="list-style-type: none"> Conducted and Completed Pilot Audits Created Agile IA Procedures and Training 	<ul style="list-style-type: none"> Wave 2: Scale <ul style="list-style-type: none"> Identify lessons learned from Pilot teams and apply to future audits Train new audit teams to execute in Agile Execute Agile IA Procedures and continued training 				<ul style="list-style-type: none"> Wave 3+: Mature <ul style="list-style-type: none"> Train new audit teams to execute in Agile Update Agile Procedures Adapt operating model details 	

Data Analytics Transformation Roadmap

	Y1 - 2018	Y2 - 2019		Y3 - 2020	
	Q1 - Q4	Q1/Q2	Q3/Q4	Q1/Q2	Q3/Q4
Internal Audit Leadership	<p>◆ Data Analytics Foundation Building</p> <ul style="list-style-type: none"> Vision & Strategy Approved data analytics vision statement and objective Agreed upon resource allocation Supported Data Analytics Initiatives 	<p>◆ Continuous Auditing</p> <ul style="list-style-type: none"> Continuous Audit Strategy Support identified business processes for script development 		<p>◆ Continuous Monitoring</p> <ul style="list-style-type: none"> Continuous Monitoring Strategy Support continuous monitoring efforts outlined by the Data Analytics team 	
Internal Audit Staff	<p>Phase 1: Data Analytics</p> <ul style="list-style-type: none"> Developed vision statement and objective Performed a data analytics skills assessment Identified and defined analytics roles Determined potential training needs and recommend training for IA staff Incorporated analytics in audit methodology Created a metric to capture analytics from 2018 audits and include current state of analytics initiative 	<p>Phase 2: Script Creation & Data Assessment</p> <ul style="list-style-type: none"> Discuss with NYPA stakeholders the opportunity to share resources, leverage knowledge and support to operationalize analytics Build data analytics skills with dedicated Internal Audit resource and schedule bi-weekly Tableau training Partner with Digital Analytics to establish data extraction methodologies Create scripts and develop related standards 		<p>Phase 3: Mature Data Analytics</p> <ul style="list-style-type: none"> Further mature the data analytics strategy through ongoing script creation and development Hand off repeatable scripts to stakeholders for self-monitoring and provide guidance for monitoring practices 	

Appendix A - Audit Coverage 2014 - 2018

Appendix A - Audit Coverage 2014 - 2018

Business Unit	Percentage of Total Audit Projects	Number of Audit Projects	Number of High Rated Projects	Number of Medium Rated Projects	No Rating (2014 Projects)
Business Services	21%	43	26	11	6
Commercial Operations	17%	35	22	8	5
Human Resources & ESS	6%	12	9	2	1
Information Technology	20%	39	35	1	3
Law	4%	8	5	2	1
Public and Regulatory Affairs	2%	4	1	2	1
Risk Management	2%	4	4	0	0
Utility Operations	18%	36	26	4	6
Canals (2017 and 2018)	10%	20	19	1	0
	100%				
Total Audit Projects		201	147	31	23

➤ From 2014 – 2018, Internal Audit will have executed 201 audit projects, including Canal Corporation. Of that total, 147 (73%) were for high risk rated audit areas, 31 (15%) were for medium risk audit areas, and 23 (12%) were for low or non-rated audit areas. The number of audit projects has increased from a total of 21 in 2014, to a total of 53 in 2018.

➤ The distribution of audit projects across NYPA's business units for the same period of time, were as follows:

- Information Technology - 39 (20%)
- Business Services - 43 (21%)
- Utility Operations - 36 (18%)
- Commercial Operations - 35 (17%)
- Canals Corp. - 20 (10%)
- Human Resources & ESS - 12 (6%)
- Law - 8 (4%)
- Risk Management - 4 (2%)
- Public & Regulatory Affairs - 4 (2%)

Appendix B – NYPA Audit Universe

Appendix B - NYPA Audit Universe

Business Services	
Audit Name	Last Audit
Accounts Payable	2014
Ariba Applications	2018
Budgeting	2015
Business Controls Management	--
Capital Asset Management	2018
Customer Revenue - Hydro Billing	2018
Customer Revenues - NIA, Flynn, BG, SENY, STL, RNY, Canals	2014
Deferred Asset Accounting	2017
Direct Expense Allocations	2017
Disposal of Personal Property	2015
Enterprise Portfolio Management	2018
EVolve Program	--
Expenditure Authorization Procedures (EAP) (NYPA and Canals)	2018 (NYPA); 2017 (Canals)
Finance and Administration (NIA, STL, CEC, WPO)	2016
Financial Accounting and Reporting	2016
Financial Data Protection	--
Financial Planning and Forecasting	--
Indirect Expenses - Cost Allocations	--
Investments and Investment Income	--
Large Scale Renewable Program	--
Lease Accounting	--
Manual Check Processing	--
Non-Purchase Order (Non-PO) Process (NYPA and Canals)	2018
NYS Procurement Report Review	2016
Past Due Receivables	2016
Payroll (NYPA and Canals)	2018 (NYPA & Canals)

Business Services	
Audit Name	Last Audit
P-Card (NYPA and Canals)	2014 (NYPA); 2017 (Canals)
PCI Compliance (Lockbox and Website) (NYPA and Canals)	2017 (Canals)
Revenue Requirements	--
Strategic Plan Governance and Execution	2016
Strategic Supply Management (SSM) Operating Model	2018
Strategic Supply Management (NYPA and Canals)	--
Supplier Diversity Program	2015
Supply Chain Management (NYPA and Canals)	--
Third Party Contract Audits	2018
Transmission Cost of Service	2017
Travel Expenses	2018
Treasury Operations	2018
Vendor Management Governance (NYPA and Canals)	2016
Wheeling Expense	--
Work Breakdown Structure (WBS) Code Governance	2018

Appendix B - NYPA Audit Universe

Commercial Operations	
Audit Name	Last Audit
Astoria II Project Agreement	--
Bid to Bill System Implementation	2018
Build Smart - EO88 Program	2014
Business Power Allocations Compliance	2018
Clean Energy Business and Market Development	--
Commercial Operations Construction Projects	2015
Customer Credit	2017
Customer Data Protection	2018
Customer Energy Solutions Program	2018
Customer Meter to Cash	2016
Dodd Frank Compliance	2018
Energy Settlements	--
Energy Trading and Hedging	2014
Fuel Operations Hedging and Purchasing	2016
Generation Bidding	2016
Generator Meter to Cash	2017
Generator Variable Costs	--
HTP Operations and Billing	2017
Hydro Forecast Process	2017
Licensing Operations	2015
Market Forecasting Services	--
Marketing Operations	--
Muni/Coop Regulation	2017
New York Energy Manager - Business Processes	2018
New York Energy Manager - Technology	2017
North Country Economic Development Plan Compliance	--
Northern NY Power Proceeds Program	2018

Commercial Operations	
Audit Name	Last Audit
Primavera Post Implementation	--
Project and Business Development	NA
Recharge NY Customer Compliance Audit (D&M)	2018
SENY Customer Contract Compliance	2018
Unforced Capacity (UCAP) Services	--
Western NY Customer Compliance Audit (D&M)	2018
Western NY Power Proceeds Program	2016

Appendix B - NYPA Audit Universe

Human Resources	
Audit Name	Last Audit
Background Checks	--
Compensation	2015
Contingent Staffing Vendor Compliance	2018
Digital Warehouse	2015
Diversity and Inclusion Program	--
Employee Benefits	--
Employee Data Protection	2017
Facility Management	--
Fleet Management Operations	2018
FMLA Compliance	--
Human Resources Operations: Recruiting, Hiring and Onboarding	2014
Knowledge Management	--
Labor and Employee Relations Management	--
Medical & Dental Benefits Administration	2018
NYPA Operations Improvement	--
OSC Audit Remediation Follow-up	2017
Post Retirement Benefits	2017
Real Estate Management	--
Success Factors	2018
Succession Planning & Retention Programs	--
Transitional Position Utilization	2017
Workers Compensation and Disability	--
WPO LEM	--

Law	
Audit Name	Last Audit
Contract Governance	2016
Energy Information Administration (EIA) Form 923 Compliance	2017
Ethics & Compliance Program (NYPA and Canals)	--
External Compliance Reports (NYPA and Canals)	2015
Intellectual Property	--
Open Data Compliance	--
Project Sunlight Compliance	--
Public Authority Law (PAL) Compliance	2015

Appendix B - NYPA Audit Universe

Information Technology	
Audit Name	Last Audit
Active Directory Review (NYPA and Canals)	--
Cloud Governance	2016
Cyber Security Policy Compliance	2018
Cyber Security Roadmap	2018
Data Center Operations	2018
Data Governance & Protection Program	--
Data Loss Prevention (DLP)	--
Database Security	--
Email Security (NYPA and Canals)	--
Encryption Key Certificate Management	--
Enterprise Architecture Management	--
ES - C2M2 Maturity Assessment	--
Help Desk Management	--
Identity Access Management	--
Intranet/Extranet Administration	--
IT Asset Management	--
IT Demand Management (NYPA and Canals)	2017 (NYPA); 2017 (Canals)
IT Disaster Recovery (DR)	2018
IT Incident Response Plan	2015
IT KPI and Metric Development	--
IT Production Support Management	--
IT Project Management Office (PMO)	2015
IT Service Management (ITSM) Implementation	--
Mobile Device Security	2018
Network Administration (NYPA and Canals)	2018
Office 365	--
Operating System Security (NYPA and Canals)	2017 (NYPA)
Patch Management	2014

Information Technology	
Audit Name	Last Audit
Remote Access	2018
SAP Basis Administration	2018
SAP Business Application Review (FI, CO, HCM, MM)	--
SAP Business Warehouse	--
SAP CHARM	--
SAP Transformation - Digital Financial Insight (DFI)	--
SharePoint Management	--
Software License Management (NYPA and Canals)	--
Storage Systems Management	--
Systems Development Lifecycle (SDLC) Governance	2018
Technology Change and Release Management	2016
Telecommunications	2017
Threat and Vulnerability Management	2018
Unstructured Data Review	--
Virtualized Computing	2018
Wireless Networks	--

Appendix B - NYPA Audit Universe

Public & Regulatory Affairs	
Audit Name	Last Audit
Contributions, Sponsorships and Events	2017
Digital Transformation Office	--
Environmental Justice	--
Event Management	--
Legislative and Regulatory Affairs	--
Media Relations (NYPA and Canals)	--
Public, Governmental and Regulatory Affairs	--
Social Media	2018
Sustainability Program	2018
Video and Photography Services	2018

Risk Management	
Audit Name	Last Audit
Counterparty Credit	--
Energy Commodity Risk Management	--
Energy Commodity Risk Management System Implementation	2018
Enterprise Risk (ER) Program	2017
Insurance Risk Management (NYPA and Canals)	--

Appendix B - NYPA Audit Universe

Utility Operations	
Audit Name	Last Audit
AGILE Strategic Initiative	2018
Business Resiliency	2017
Communications Backbone Program	--
Dam Safety (BG, STL, NIA, Jarvis, Canals)	2015 (NYPA); 2018 (Canals)
Drones Use Program (NYPA and Canals)	--
Electronic Data Interchange (EDI)	--
Emergency Management (NYPA and Canals)	2018 (Canals)
Engineering Operations	--
Environmental Health and Safety Program (NYPA and Canals)	2014 (NYPA); 2018 (Canals)
GE Asset Performance Management (APM) Implementation	--
Integrated Smart Operations Center (iSOC)	2018
Inventory and Warehousing: NIA, STL, BG, SENY	2016
ISO 55001 Framework Compliance	--
Lockout/Tagout Compliance	2016
LPGP LEM	2017
Maximo Asset Management Application Review	2018
Moses - Adirondack Smart Path Reliability Project	--
NERC CIP Support	2017
NERC Compliance Operations and Planning Standards	--
Occupational Health and Safety Training Program	2016
Operations Technology Data Base Security	--
Operations Technology Disaster Recovery (DR)	2018
Operations Technology Operating System Security (NYPA and Canals)	--
OSI PI Expansion Implementation	--
Physical Security (NYPA and Canals)	2015

Utility Operations	
Audit Name	Last Audit
Power Systems Operations and Energy Control Center	2014
Project Management Operations (Cycle)	2016
Quality Assurance and Code Compliance	2015
Research and Technology Development	2016
Resource Loaded Scheduling	--
Sensor Deployment Roadmap	--
Site Operations and Maintenance (Central, Northern, Western, 500 MW, SENY, SCPP)	2016
Site SCADA Systems (NIA, BG, STL, SENY)	2018
Technical Compliance Management Audits	--
Technical Training	2016
Transmission LEM	2016
Union Labor Relations	--
Utility Operations Construction Projects	--
Vegetation Management	2018

Appendix C - Proposed 2019 Audit Plan

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#	Audit Project Name	Project Type	Business Unit	Risk Rating	Risk Description	Preliminary Scope	Risk Category	Timing
1	Supply Chain Management (NYPA and Canals)	Assessment	Business Services	H	Management has not identified supply chain risks including the unavailability of necessary equipment/services for NYPA operations which may cause disruption to the business. In addition, strategies or actions have not been developed to mitigate and manage these risks and reduce vulnerability and ensure continuity.	Review the internal and external supply chain risks identified by management and determine whether all risks have been properly identified for the organization. Review actions implemented to mitigate these risks and determine whether these actions are effective and demonstrate compliance with NERC CIP 013 standard.	Operations	Q3
2	Customer Revenues - NIA, Flynn, BG, SENY, STL, RNY, Canals	Audit	Business Services	H	Inadequate controls and processes over billing, accounting and reporting of customer revenues could result in financial loss and reputational risk to NYPA.	Determine the adequacy and effectiveness of controls to ensure that customers are billed accurately based upon meter data received and at the proper rates. Specifically, the controls over customer revenue cycle including billing, invoicing, application of rates, recording and accounting of accounts receivable and cash receipts. Additionally, verify compliance with the terms of customer contracts and internal policy and procedures.	Financial	Q2
3	Vendor Management Governance	Assessment	Business Services	H	Inadequate vendor, service provider, consultant or contractor selection and/or performance could lead to inefficiencies within NYPA, confusion or conflict with its customers, performance delays or quality deficiencies, potential litigation against NYPA or impairment to NYPA's reputation.	Evaluate vendor management practices across NYPA and Canals including governance, vendor selection and sourcing, maintaining relationships and evaluating vendor performance. Determine if management has considered an entity-wide vendor management approach and if actions have taken place in this direction.	Operations	Q2
4	Third Party Contract Audits	Audit	Business Services	M	Third party vendor non-performance could lead to delays or failure to achieve business objectives, impairment of NYPA's reputation or increased litigation.	Identify high risk third party contracts (vendor, service provider, contractors or consultants) and exercise Internal Audit's audit rights to confirm performance in accordance with contract terms including accuracy of invoicing and contract deliverables.	Operations	Q2
5	Financial Planning and Forecasting	Audit	Business Services	M	Inaccurate financial planning and operating forecast could result in suboptimal resource allocation decisions and/or inaccurate NYPA financial reporting. Specifically: <ul style="list-style-type: none"> • NYPA's resources are not allocated efficiently/effectively. • Strategic or tactical decisions are based on incomplete or inaccurate information. • Liquidity issues due to non-compliance with bond resolution and/or bond-holder dissatisfaction. • Failure to forecast financial information to enable the allocation of resources to new and existing initiatives. • Inaccurate or incomplete data supporting new financial performance metrics could lead to uninformed management decisions. 	<p>Review the adequacy and effectiveness of operating controls associated with the long range financial plan and ongoing operating forecasts. Review data quality control procedures and confirm the disclosure of assumptions used.</p> <p>For a sample of financial plans and forecasts, confirm data accuracy and timeliness of issuance. Review ongoing monitoring of actual performance to forecasts. Evaluate operating forecast inputs, processes and outputs to ensure repeatable and reliable forecasts. Ensure forecasting best practices are applied and controls to validate input accuracy exist.</p> <p>Verify the completeness and accuracy of information supporting the Economic Value Add (EVA) performance metric as well as the Profit and Loss statements for NYPA's profit centers. Ensure calculations of metrics are accurate and consistent.</p>	Financial	Q2

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#	Audit Project Name	Project Type	Business Unit	Risk Rating	Risk Description	Preliminary Scope	Risk Category	Timing
6	Budgeting	Audit	Business Services	M	Inadequate budgeting processes to determine O&M and Capital budgets can lead to insufficient allocation of capital to areas required to fuel NYPA's growth and execute its strategies. In addition, inadequate monitoring of NYPA's budget can lead to cost overruns and not meeting business objectives.	Review the adequacy and effectiveness of the current budgeting process for both the operating and capital budget such as who is responsible for making budgeting decisions, how departments monitor budgets throughout the year (i.e., KPIs), how items within the budgets are prioritized and approvals in place. Review procedures, processes and controls over the preparation and monitoring of the O&M and Capital Budgets. Verify compliance with established policies and procedures.	Financial	Q2
7	Commercial Operations Construction Projects	Audit	Commercial Operations	H	Inadequate controls over the life cycle of Commercial Operations projects, including energy efficiency, could result in an inability to properly manage a project to successful completion and meeting customer expectations.	Evaluate the adequacy and effectiveness of controls over the project selection process and phases of the project including construction authorization, procurement of material, installation and labor, accounting for project costs, program recovery and project closeout. Verify the use of the Primavera system to manage Commercial Ops Projects.	Operations	Q1
8	Energy Trading and Hedging	Audit	Commercial Operations	H	Inadequate controls to properly manage and oversee the energy trading and hedging processes may result in unauthorized transactions leading to financial and reputational risk for NYPA.	Review the controls over the energy hedging activities to ensure segregation of duties exists from front and middle office, deal transactions are authorized, complete and accurate. Validate the adequacy of controls within the following processes: transaction initiation, independent monitoring, deal capture, and documentation. Verify that energy trading and hedging information is provided to management in a timely and accurate manner to allow for decision making, transactions are authorized through an approved risk management strategy, and the middle-office is adequately monitoring trade activities for compliance with internal policies and procedures.	Financial	Q3
9	Market Forecasting Services	Audit	Commercial Operations	H	Excessive over/under forecasting of loads may result in an increase of balancing energy forecast errors which will increase the cost of power to NYPA's customers for short term customer load forecasting. Inadequate controls over forecasting could lead to inaccurate financial information generated for use in making business decisions for long term customer load forecasting.	Short term customer load forecasting: Evaluate the adequacy of controls associated with the short term customer load forecasting processes, the development of bid components scheduled into the NYISO energy and capacity market and the reconciliation of loads to minimize balancing energy forecast variances. Long term customer load forecasting: Review the processes and controls over the creation of a comprehensive forecast of demand and energy sales, peak loads, as well as production, delivery and NYISO related revenues for all NYPA customers. Additionally, the annual sales, peak load and revenue forecast for use in the NYPA Operating Forecast, Public Authorities Budget Report (2801) and NYPA's Budget and Financial Plan.	Operations	Q1

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#	Audit Project Name	Project Type	Business Unit	Risk Rating	Risk Description	Preliminary Scope	Risk Category	Timing
10	Generator Variable Costs	Audit	Commercial Operations	H	Inaccurate or incomplete generator variable cost data could lead to generation assets not optimally positioned in the market.	Verify the accuracy and completeness of variable costs, including variable costs from Utility Operations, for NYPA's generation assets and confirm actual variable costs exist at the NYISO as required in the NYISO's Reference Level Manual to optimally position the assets.	Financial	Q2
11	Build Smart - EO88 Program	Audit	Commercial Operations	H	Failure to maintain an effective monitoring process of the Build Smart program can result in non-compliance with requirements of Executive Order 88 (EO88).	Evaluate the adequacy and effectiveness of internal controls over the administration of the Build Smart - EO88 program by NYPA and assess management's oversight of compliance to their obligations noted in the Executive Order.	Legal and Regulatory	Q1
12	Energy Settlements	Audit	Commercial Operations	H	Inadequate controls associated with erroneous downloading or recording of settlement data may lead to inaccurate energy sales, incorrect financial reporting information and NYISO billing errors leading to operational, financial and reputational risk to NYPA.	Review processes and controls associated with Energy Settlements, NYISO Settlement Data and Reconciliation, NYISO rebills and recording of Energy settlements in SAP. Assess the current state processes and controls.	Financial	Q3
13	Bid to Bill System Implementation	Audit	Commercial Operations	M	Lack of effective system implementation, project management and business process controls can result with inadequate system design, project delays, cost overruns, poor system performance and user dissatisfaction.	Review implementation activities to ensure the Bid to Bill System has proper business requirements including controls, system configuration, interfaces, systems and user acceptance testing, system security and overall project management.	Operations	Ongoing
14	Recharge NY Customer Compliance Audit (D&M)	Audit	Commercial Operations	M	Non-compliance with Recharge NY and other power allocation program (EP, RP, etc.) legislation could lead to increased regulatory scrutiny and negatively impact NYPA's reputation.	Recurring customer audits for the NYPA Marketing Department to support the compliance program.	Legal and Regulatory	Ongoing
15	Western NY Customer Compliance Audit (D&M)	Audit	Commercial Operations	M	Noncompliance with Western NY and other power allocation program (EP, RP) legislation could lead to increased regulatory scrutiny and negatively impact NYPA's reputation.	Recurring customer audits for the NYPA Marketing Department to support compliance program.	Legal and Regulatory	Ongoing
16	Human Resources Operations: Recruiting, Hiring and Onboarding	Audit	HR and Shared Services	H	Inadequate controls in place for the recruiting, hiring and onboarding can lead to: <ul style="list-style-type: none"> • Hiring of unqualified employees. • Non-compliance with applicable laws and regulations. • Failure to perform background checks. • NYPA fails to attract and retain employees with the requisite knowledge and experience. • Positions remain open for long periods of time and business units cannot achieve their objectives. • Employees are not properly onboarded to assist with new position adjustment and acclimation. 	Review procedures, processes and controls for the recruiting, hiring and onboarding processes. Verify compliance with established internal policies and procedures, state agency procedures or laws/regulations. Determine the effectiveness of HR staff assisting management with filling open positions and proper onboarding procedures are in place.	Operations	Q3
17	Employee Data Protection	Assessment	HR and Shared Services	M	Lack of proper controls in place to ensure sensitive employee data such as SS#, date of birth and other sensitive data has not been disclosed, can lead to employee identity theft and reputational damage to NYPA.	Evaluate the controls governing employee data to ensure Personally Identifiable Information (PII) and Protected Health Information (PHI) is protected from compromise in accordance with NYPA's policies and procedures and industry regulations such HIPAA, US Privacy Act, Identity Theft Prevention Act and other regulations.	Operations	Q1

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#	Audit Project Name	Project Type	Business Unit	Risk Rating	Risk Description	Preliminary Scope	Risk Category	Timing
18	Knowledge Management	Audit	HR and Shared Services	M	Failure to capture knowledge from departing NYPA employees could lead to ineffective and inefficient operations.	Evaluate policies and procedures for the knowledge transfer program for employees departing NYPA or transferring to another department. Determine criteria for employees that require knowledge transfer and adequacy of documentation retained.	Strategic	Q4
19	Background Checks	Audit	HR and Shared Services	M	Inadequate background check processes can lead to NYPA hiring staff without obtaining relevant information as to their suitability for hire, resulting in poor performance, an unsafe work environment, exposure to fraud, illegal practices and security risks, non-compliance with external laws and regulations, financial penalties, losses and reputational risk to NYPA.	Review policies and procedures for background checks to ensure consistency of requirements and application across business units involved in onboarding employees, contractors and sub-contractors. Ensure background checks are part of onboarding practices for employees, contractors and subcontractors for individuals accessing NYPA's facilities and systems.	Operations	Q2
20	IT Vendor Management	Consulting	Information Technology	H	IT vendors play a significant role within NYPA, both supporting day to day IT operations, and strategic initiatives. As a result, ineffective management and oversight of these vendors can lead to fraud, waste, and abuse of NYPA resources, and impact NYPA's reputation.	Assess policies and procedures that support NYPA's IT governance framework as they relate to IT vendors. Determine if an inventory of IT vendors is maintained and validate that a risk assessment has been performed on each vendor, or that SOC-1 of SSAE -18 reports have been received for each, in accordance with NYPA policy. For a sample of vendors, assess whether periodic reviews are performed to determine the vendor is meeting their obligations and agreed upon Service Level Agreements (SLAs), has satisfactory security and access controls and can continue providing NYPA with the expected services by assessing the vendors' IT general controls.	Technology	Q3
21	ES - C2M2 Maturity Assessment	Assessment	Information Technology	M	Failure to protect the NYPA and Canal's network and data by securing access to IT systems and applications, or allowing unauthorized parties access to confidential employee, customer or operations data can lead to system compromise and reputational damage. In addition, not addressing the recommendations from the ES-C2M2 assessment may not allow the cyber security maturity desired by the organization.	Assess the actions taken by the Cyber Security team, under the direction of the CISO and Deputy CISO, to address any gaps identified during the recent security maturity assessment based on the ES-C2M2 framework to raise NYPA's security posture.	Technology	Q3
22	Identity Access Management	Audit	Information Technology	M	Failure to have proper controls in place for user authentication, role-based access, access monitoring and timely de-provisioning to NYPA's network can lead to unauthorized access and system compromise.	Assess the effectiveness of processes, procedures, and tools in place to ensure all users (internal, external and temporary) are given appropriate access to NYPA's network and applications in accordance with job roles and responsibilities, are authorized and proper authentication methods implemented. Evaluate process for proper user provisioning which includes requesting, establishing, issuing, suspending, modifying and closing user accounts and related user privileges. Determine adequate user access monitoring has been established which includes entitlement reviews and activity log evaluation.	Technology	Q2

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#	Audit Project Name	Project Type	Business Unit	Risk Rating	Risk Description	Preliminary Scope	Risk Category	Timing
23	Cloud Governance	Audit	Information Technology	M	Increasing reliance on cloud based technology solutions could result in potential security concerns if proper contract requirements, service level agreements and security controls are not in place for cloud-based solutions.	Evaluate the controls in place to manage incoming and existing cloud solutions within NYPA. Verify governance procedures are consistently applied including, contract requirements and evaluation of security controls for cloud based solutions. Determine if procedures and tools are in place to evaluate unknown cloud solutions exist within NYPA's computing environment and actions taken.	Technology	Q1
24	IT Project Management Office (PMO)	Audit	Information Technology	M	Inadequate processes to manage the IT Project portfolio and have visibility into project milestones and costs can lead to inaccurate forecasted project costs, inability to manage project costs throughout a project causing delays, long lead times, project failure, unallocated resources, increased costs and lower economic return.	Evaluate the adequacy and effectiveness of project management governance controls within IT, such as Project Risk Management, Cost Management and Quality Management processes. This should include the setting and monitoring of projects against milestones throughout the project lifecycle, processes and procedures followed by IT to accept or reject capital project requests (i.e., business requirements), new system governance (i.e., who can procure a system, who must approve the procurement, when IT gets involved), communication with the business, timelines, and prioritization.	Technology	Q3
25	IT Service Management (ITSM) Implementation	Assessment	Information Technology	M	Ineffective deployment of the ITSM framework, related processes and tools can result in ineffective project or service delivery by IT, cost overruns and customer dissatisfaction.	Evaluate the plan management has developed to implement ITSM and the progress to date. Determine if these processes have been adequately documented and implemented within IT operations. Verify if IT is using a tool to deploy ITSM and is obtaining key IT data to develop metrics to measure performance, can make adjustments accordingly and meet IT demand.	Technology	Q3
26	Wireless Networks	Audit	Information Technology	M	Failure to manage and maintain wireless networks according to documented policies, procedures, and security industry best practices could result in compromise of NYPA and Canals' sensitive data and information.	Verify proper security configuration has been implemented for wireless networks in accordance with policies and procedures and security best practices to ensure optimal security. Determine if wireless networks are monitored for any rogue access points exposing NYPA's network and end users.	Technology	Q4
27	Technology Change Release Management	Audit	Information Technology	L	Inadequate change management processes and controls with proper segregation of duties may increase the risk of unauthorized changes implemented to production environment, inconsistency, and inefficiency from the operations and supporting personnel.	Evaluate the technology change management process and governance organization wide in IT and OT including the policies and procedures, ownership of the processes and controls, documentation requirements, and segregation of duties between development and production environment. Test select high risk controls based on the understanding of the design of the processes and controls.	Technology	Q4

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#	Audit Project Name	Project Type	Business Unit	Risk Rating	Risk Description	Preliminary Scope	Risk Category	Timing
28	Ethics & Compliance Program (NYPA and Canals)	Audit	Law	M	Failure to maintain an effective Ethics and Compliance program could result in non-compliance with laws and regulations, not demonstrating a compliance culture and potentially poor employee morale negatively impacting NYPA. In addition, non-compliance with certain FERC regulations could result in penalties/fines and increased regulatory scrutiny.	Evaluate NYPA and the Canals procedures and controls associated with the Ethics and Compliance program management, monitoring of legal and regulatory standards, oversight of employees concerns hotline, whistleblower hotline, anti-retaliation requirements and fraud program. Evaluate NYPA's compliance with CP1-7 - Anti-Retaliation Policy and the monitoring of the FERC Standard of Conduct and Anti-Market Manipulation rule.	Legal and Regulatory	Q3
29	External Compliance Reporting (NYPA and Canals)	Audit	Law	M	Non-compliance with Federal and State reporting requirements could lead to fines, penalties or other regulatory sanctions.	Evaluate the controls associated with compiling and maintaining the compliance reporting requirements to external parties and regulators. Ensure that the Compliance Repository maintains all external parties and regulatory reporting documents.	Legal and Regulatory	Q4
30	Sustainability Program	Consulting	Public and Regulatory Affairs	L	Mismanagement of socially responsible activities may result in unfavorable organizational perception with stakeholders, customers, suppliers, business partners, employees and the regulatory community.	Provide consulting support throughout 2019 to evaluate the implementation of the five year plan for the sustainability program to ensure proper controls are in place and key regulations for sustainability have been addressed.	Strategic	Ongoing
31	Energy Commodity Risk Management System Implementation	Audit	Risk Management	M	Lack of effective system implementation, project management and business process controls can result with inadequate system design, project delays, cost overruns, poor system performance and user dissatisfaction.	Review implementation activities to ensure the Energy Commodity Risk Management system (Allegro and Ascend) have proper business requirements including controls, system configuration, interfaces, systems and user acceptance testing, system security and overall project management.	Operations	Ongoing
32	Utility Operations Construction Projects	Audit	Utility Operations	H	Failure to effectively implement project management controls for construction activities can lead poor quality and the inability to coordinate production control, shop operations, maintenance, manufacturing engineering, safety, environmental and quality departments to meet customer demand and grid reliability. In addition, untimely percentage complete and overpayment may result.	Verify governance and controls are in place throughout the duration of a construction project from initiation through project completion to determine appropriate management oversight has been implemented to mitigate risks of poor quality construction, not meeting timely project percentage completion and overpayment. Evaluate project activities for compliance to Project Management and OPMG policies and procedures.	Operations	Q2
33	Sensor Deployment Roadmap	Assessment	Utility Operations	H	Inefficient and ineffective project implementation of the Sensor Deployment project may lead to inability to meet Smart G&T and Asset Management strategic initiatives and objectives for digitization of the grid and situational awareness of its assets, potential cost overruns, and inefficient use of NYPA resources.	Assess compliance to NYPA's project management policies and procedures and project activities are appropriately managed, monitored, and project milestones and status are reported to relevant management on a periodic basis. Determine that project objectives and requirements are met by reviewing the project plan and progress to date and project costs are tracked against budget.	Strategic	Q2

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#	Audit Project Name	Project Type	Business Unit	Risk Rating	Risk Description	Preliminary Scope	Risk Category	Timing
34	ISO 55001 Framework Compliance	Assessment	Utility Operations	H	Lack of clear understanding and plan to comply with ISO 55001 could result in suboptimal allocation of NYPA resources and not obtaining the desired ISO 55001 certification.	Determine that Utility Operations has developed a defined plan for compliance with ISO 55001 within the roadmap to achieve certification. Specifically: <ul style="list-style-type: none"> • Asset Management System Monitoring - support development of a governance process to monitor the effectiveness of the Asset Management System. • Management, Review, Audit and Assurance - support the development of a clear and consistent strategy for providing assurance in accordance with the standard. 	Strategic	Q2
35	Site Operations and Maintenance (Central, Northern, Western, 500 MW, SENY, SCPP)	Audit	Utility Operations	H	<p>Lack of processes, policies and procedures for planning, monitoring and controlling recurring and non-recurring operating and maintenance expenses, for both Generation and Transmission assets, including outside contractor costs, may lead to unmitigated risks, non-compliance with internal policies and procedures and Federal laws and regulations (e.g. the water entitlement agreements, NERC Reliability Standards, FERC license), regulatory scrutiny by FERC (including Dam Safety), negative public opinion of NYPA, regulatory fines/penalties or a negative impact on performance. Inadequate and ineffective controls (including IT general controls) may impact plant reliability, efficiency and effectiveness.</p> <p>Inefficient operations may lead to loss of revenue due to plant producing more than demand, or not producing enough to meet demand. Non-compliance with the Maintenance Resource Management Program may lead to extended outages due to unavailable critical spare parts or parts with long lead times. Incomplete or inaccurate information may be used to report performance; unavailability of key systems; and lack of benchmarking and reconciliation with established goals and performance metrics.</p> <p>Lack of controls over non-recurring O&M expenditures may lead to inappropriate expenses or misclassification of expenses, which may result in financial loss.</p>	<p>Assess the effectiveness of processes, procedures and controls used in the day-to-day monitoring and maintenance of the Generation & Transmission Operations, and that they are consistently managed at each site. Confirm compliance with applicable NERC and FERC compliance requirements as well as adequate mitigation of risks.</p> <p>Review site's operations to ensure plant's production aligns with the demand. Review site's compliance with the Maintenance Resource Management Program, established goals and performance metrics, outage management practices including project scoping, cost estimation, vendor selection and vendor management activities, cost and schedule activities.</p> <p>Review and validate adequacy of maintenance of plant equipment, generation, transmission, and network infrastructure, to ensure physical protection and stewardship over long-lived assets.</p> <p>Review non-recurring Operations and Maintenance (O&M) expenditures and validate that the expenses are appropriate, properly vetted, and classified correctly (capital or O&M). Determine whether the process is robust to identify whether NYPA is spending wisely.</p>	Operations	Q1
36	OSI PI Expansion Implementation	Audit	Utility Operations	H	Lack of effective system implementation, project management and business process controls can result in inadequate system design, project delays, cost overruns, poor system performance and user dissatisfaction.	Review implementation activities to ensure that the expansion of the OSI PI system has proper business requirements including controls, system configuration, interfaces, systems and user acceptance testing, system security and overall project management.	Operations	Q3

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#	Audit Project Name	Project Type	Business Unit	Risk Rating	Risk Description	Preliminary Scope	Risk Category	Timing
37	Business Resiliency	Audit	Utility Operations	H	Lack of alignment of the various business resiliency functional areas working together to establish emergency management, business continuity, disaster recovery and incident response solutions could lead to potential harm to employees, the public, unavailability of assets for operations, system compromise and reputational damage to NYPA.	Evaluate the business resiliency program which can include emergency management, business continuity, disaster recovery and incident response procedures across NYPA to confirm common vision, framework(s) and alignment.	Operations	Q1
38	Power System Operations and Energy Control Center	Audit	Utility Operations	H	Inefficient and inadequate communication, application and reporting of Energy Control Center operations with Power System and NYISO requirements could result in improper and inadequate implementation of monitoring and controls of such requirements. In addition, inadequate monitoring and controls can compromise operations and reliability of NYPA's transmission and generation system.	Review processes and controls over Power System Operations for all locations, including the regional control rooms and the Energy Control Center. Review interface and efficiency of communication with plants, WPO Energy Resource Management, ECC Energy Management Systems, Operations Planning and other support functions. Test and evaluate the adequacy and effectiveness of the Energy Management System (IT general controls and application controls) and any manual controls, including log books. Verify compliance with established policies and procedures.	Operations	Q3
39	Physical Security (NYPA and Canals)	Assessment	Utility Operations	H	Improper or lack of physical security equipment and controls implemented within NYPA and Canals' sites can lead to: <ul style="list-style-type: none"> • Significant injury or loss of life. • External threats to plant safety including, but not limited to, cybersecurity and terrorism. • Internal/external threats to NYPA's command and control, including data processing, communications infrastructure, and key employees. • Hiring employees or contractors with a past history that is not consistent with NYPA's culture/risk profile. • Inadvertent, malicious damage or theft of critical assets. • Insufficient skills or training to successfully perform assigned duties. 	Review of physical security programs including all relevant CIP procedures related to inspections, monitoring activities, guard services, capital improvements impacting all NYPA and Canals locations (i.e. generation, transmission including substations, headquarters, and Canals waterways and supporting structures). Verify compliance with established NYPA and Canals policies and procedures and alignment to CIP 14 physical security requirements. Review NYPA's actual to stated objectives in the physical security infrastructure/technology upgrades. Ensure change management initiatives to enable end users were adequate and had the desired results.	Operations	Q3

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#	Audit Project Name	Project Type	Business Unit	Risk Rating	Risk Description	Preliminary Scope	Risk Category	Timing
40	Emergency Management (NYPA and Canals)	Audit	Utility Operations	M	An inadequate Emergency Management Program can lead to: <ul style="list-style-type: none"> Responsibilities are not properly assigned. Activities are not properly coordinated. Testing, drills and trailing are not performed. Generators, communication devices and other equipment and supplies are not tested. Non-compliance with laws and regulations. Communication channels with internal personnel are ineffective, inaccurate, or untimely; incorrect messages are communicated to recover and maintain business operations in the event of a crisis or disruption due to physical or natural circumstances. Potential unsafe conditions for employees. Excessive costs due to inefficiencies and ineffectiveness to manage the program. 	Evaluate current policies and procedures in place for facilitating corporate communication during an emergency situation such as NYPA and Canals' Emergency Management plans, and evaluate the effectiveness and adequacy of emergency planning, training and testing processes. Evaluate the emergency management, business resiliency, business continuity, disaster recovery and incident response functions in development or in reengineering across NYPA to confirm common vision, framework(s) and alignment.	Operations	Q2
41	Lockout/Tagout Compliance	Audit	Utility Operations	M	Ineffective lock out/tag out of energized equipment could lead to an employee safety incident or an unplanned outage.	Ensure NYPA personnel continue to rigorously follow the requirements in the Clearance and Protection Procedure (CPP-1) related to lock out and tag out of energized equipment before maintenance is performed. Ensure the PTR Plus system used to request clearances and related interfaces continues to enable the effective implementation of CPP-1.	Operations	Q1

Appendix D – Supporting Information

Appendix D – Proposed Q1 Projects

Q1 projects were selected to align to either management requests or to minimize impact to NYPA functions working on strategic initiatives:

Area	Project
Operations	<ul style="list-style-type: none"> • Commercial Operations Construction Projects • Site Operations and Maintenance • Market Forecasting Services • Business Resiliency • Energy Commodity Risk Management System Implementation • Lockout/Tagout Compliance • Cloud Governance • Bid to Bill System Implementation • Employee Data Protection
Strategic	<ul style="list-style-type: none"> • Sustainability Program
Financial	<ul style="list-style-type: none"> • Four audit projects are scheduled for Q2
Legal and Regulatory	<ul style="list-style-type: none"> • Build Smart - E088 Program • Recharge NY Customer Compliance Audit (D&M) • Western NY Customer Compliance Audit (D&M)

Appendix D – Plan Alignment to Strategic Initiatives

Strategic Initiative	Projects
Asset Management	<ul style="list-style-type: none"> • ISO 55001 Framework Compliance • Site Operations and Maintenance • Supply Chain Management • OSI PI Expansion Implementation • Generator Variable Costs • Power System Operations and Energy Control Center • Lockout/Tagout Compliance • Financial Planning and Forecasting
Customer Solutions	<ul style="list-style-type: none"> • Commercial Operations Construction Projects • Recharge NY Customer Compliance Audit (D&M) • Western NY Customer Compliance Audit (D&M)
Knowledge Management	<ul style="list-style-type: none"> • Knowledge Management
Process Excellence	<ul style="list-style-type: none"> • Bid to Bill System Implementation • IT Project Management Office (PMO) • IT Service Management (ITSM) Implementation
Smart Generation & Transmission	<ul style="list-style-type: none"> • Utility Operations Construction Projects • Sensor Deployment Roadmap
Workforce Planning	<ul style="list-style-type: none"> • Human Resources Operations: Onboarding, Recruiting, Hiring and Onboarding

Appendix D - Plan Alignment to Top Enterprise Risks

Top Enterprise Risk	Projects
Attract and Sustain Qualified Workforce	<ul style="list-style-type: none"> Human Resources Operations: Recruiting, Hiring and Onboarding
Commodity Market Volatility	<ul style="list-style-type: none"> Energy Trading and Hedging Market Forecasting Services Energy Commodity Risk Management System Implementation
Critical Infrastructure Failure	<ul style="list-style-type: none"> Utility Operations Construction Projects ISO 55001 Framework Compliance Site Operations and Maintenance Business Resiliency Power Systems Operations and Energy Control Center Physical Security (NYPA and Canals) Emergency Management (NYPA and Canals)
Customer Energy Choices	<ul style="list-style-type: none"> Commercial Operations Construction Projects Recharge NY Customer Compliance Audit (D&M) Western NY Customer Compliance Audit (D&M)
Cyber Security	<ul style="list-style-type: none"> ES - C2M2 Maturity Assessment Identity Access Management Cloud Governance Employee Data Protection Wireless Networks

Appendix D - Plan Alignment to Top Enterprise Risks

Top Enterprise Risk	Projects
Data Governance & Management	<ul style="list-style-type: none"> • Bid to Bill System Implementation
Disruptive Innovation	<ul style="list-style-type: none"> • Sensor Deployment Roadmap • OSI PI Expansion Implementation
Hydro Flow Volumes	<ul style="list-style-type: none"> • None
Regulatory/Legislative Environment	<ul style="list-style-type: none"> • Build Smart – E088 Program • Lockout/Tagout Compliance • Ethics & Compliance Program (NYPA and Canals) • External Compliance Reporting (NYPA and Canals) • Sustainability Program
Sustained Low Power Prices	<ul style="list-style-type: none"> • Generator Variable Costs • Financial Planning and Forecasting
Third Party Management	<ul style="list-style-type: none"> • Supply Chain Management • IT Vendor Management • Vendor Management Governance • Third Party Contract Audits

Appendix E – Audit Plan Internal Audit Resource Allocation

Appendix E – Audit Plan Internal Resource Allocation

	# of Days	# of Hours
Total Available Time	4,755	35,663
Non-Audit Time		
- Training/Professional Development	(370)	(2,775)
- Vacation/Sick/Holidays	(783)	(5,873)
- Administrative (includes vacancy factor)	<u>(675)</u>	<u>(5,062)</u>
Total – Non-Productive Time	<u>(1,828)</u>	<u>(13,710)</u>
Continuous Improvement (Reinvest in IA processes)	(491)	(3683)
Available Resource Time	<u>2,436</u>	<u>18,270</u>
Professional Services - Client Support Hours	(203)	(1,522)
Hours Available for Audit Plan	2,233	16,748*

* Includes Manager and Director time



**NY Power
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Audit Committee

2019 Canal Corporation Internal Audit Plan

12/11/2018

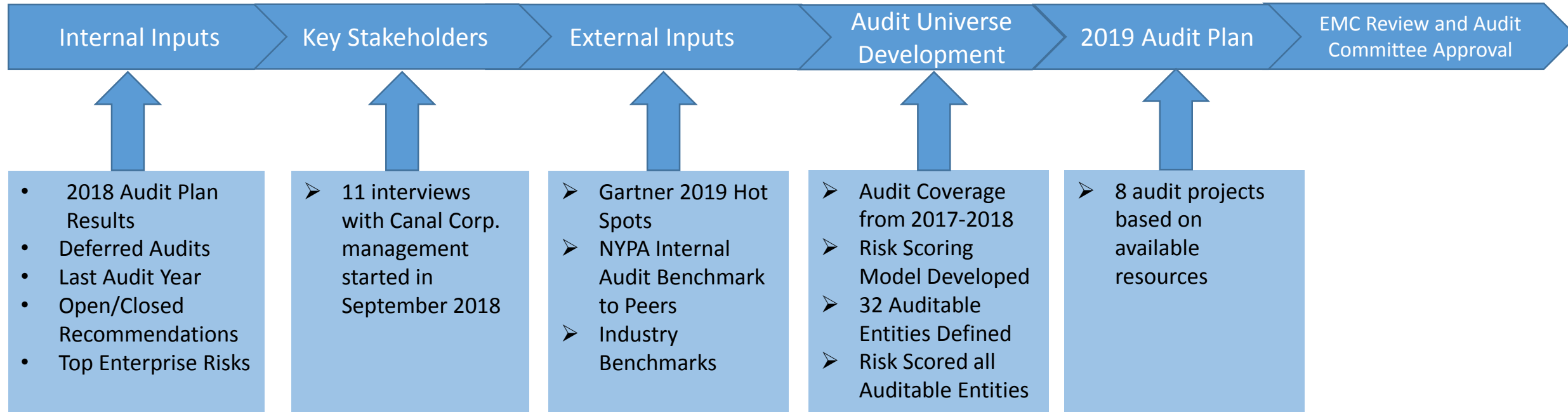
Executive Summary

Annual Audit Plan

Internal Audit's work in 2019 represents the third year the Canal Corporation will be under the purview of the Internal Audit function. The proposed 2019 Audit Plan is fully developed and reflects the following:

- A defined and risk-scored Audit Universe aligned by business unit. Audit entities that provide shared services to the Canal Corporation were included in the NYPA Audit Universe.
- Audit projects in the plan are a subset of the Audit Universe selected based on audit risk ranking, last audit date, IA resources.
- Top Enterprise Risks as identified by Risk Management have been aligned to the audit plan.
- Emerging risks will be given appropriate consideration, and the audit plan will be adjusted as business needs change.
- Key stakeholder input/buy-in including Executive Management and various Risk Management and Business Units.
- Internal Audit requests that the Audit Committee approve the 2019 Canal Corporation Internal Audit Plan.

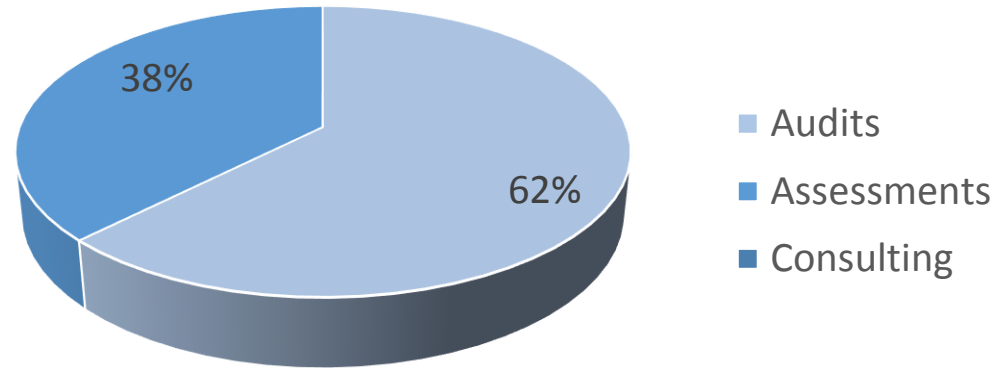
Risk Assessment Process



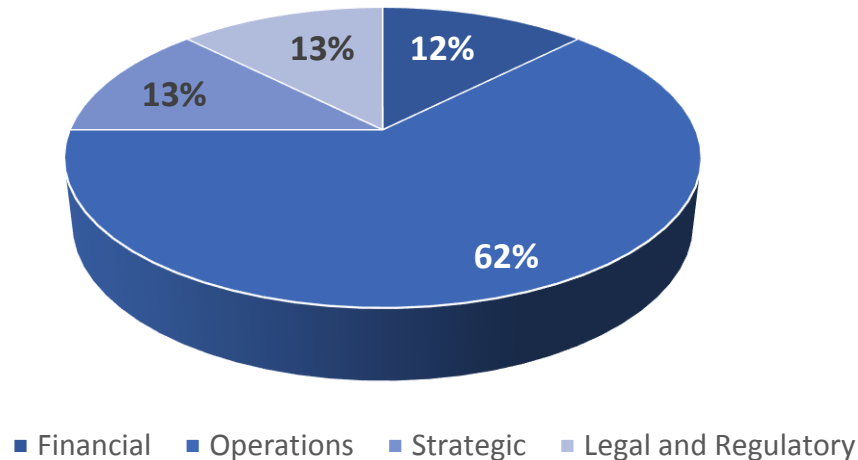
Proposed 2019 Plan – Audit Plan Coverage

2019 Planned Activities

* 8 projects in the Proposed 2019 Audit Plan



2019 Plan Allocation



Comparison to Prior Years

	2019 Plan	2018 Actual	2018 Plan	2017 Actual (1 st Year)
Assessments	3	3	7	3
Audits	5	3	4	11
Total	8	**6	11	14

* See Appendix A for Proposed 2019 Audit Plan

**Audit projects decreased in 2018 due to the initiative for the Canal Corporation and NYPA staff to develop processes and procedures for key shared services functions.

Proposed 2019 Plan – Resource and Audit Type Allocation

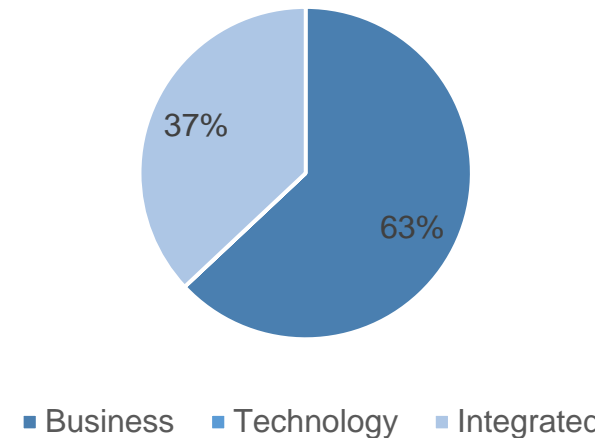
Year 3 Impact

From audit activities in 2017 and 2018 and development of the Canal Corporation Audit Universe, 2019 audits will focus on key business operations areas as follows:

- Four out of eight audit projects (50%) will review key areas for asset maintenance and continue audit coverage for business areas from 2017 (i.e. Permits Management).
- The Canal Corporation Audit Universe (See Appendix B) reflects audit entities specific to the Canal Corporation as well as entities currently not under shared services from NYPA. This will be subject to change as the shared services model is more defined. Shared services from NYPA has been captured in the NYPA Audit Universe.
- To complete the 2019 Audit Plan and establish resources to cover audits for the Canal Corporation, Internal Audit has a consulting budget of approximately \$500,000 and will allocate one staff member to these audit projects and additional staff as they are hired. One NYPA Senior Auditor has been allocated to conduct audits for the Canal Corporation audit plan.
- Internal Audit's goal is to develop NYPA expertise for Canals business operations and processes and to use co-source resources for subject matter expertise in future audits.

Resource Allocation		
	Business	Technology
Actual Resource hours available	1,200	0
Budgeted Third Party hours available	1,850	150
Proposed 2019 Audit Plan Hours	3,050	150

Types of Audits



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2019 Audit Plan Alignment to Top Enterprise Risks

Audit Projects were aligned to the top four Canals Enterprise Risks and represents 63% of the Audit Plan.

Top Enterprise Risks	2019 Audit Plan Coverage
Attract and Retain Qualified Workforce	Recruiting, Hiring and Onboarding
Critical Infrastructure	Asset Maintenance Maximo Lite Post Implementation Vegetation Management
Organizational Integration and Practices	*None
Public Health and Safety	Public Safety

* Note: Audits related to Organizational Integration and Practices risk were covered in the Canal Corporation 2018 Audit Plan.



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Appendix A - Proposed 2019 Audit Plan

Appendix A - Proposed 2019 Audit Plan

#	Audit Project Name	Project Type	Business Unit	Risk Rating	Risk Description	Preliminary Scope	Risk Category	Timing
1	Asset Maintenance	Audit	Engineering & Maintenance	H	Assets are not appropriately managed and maintained which may lead to unnecessary equipment purchasing, wasted resourcing, and failure of critical assets.	Evaluate the process by which Canals assets are monitored and maintained to ensure no duplicate items are purchased, resources are not misallocated, and pre-determined maintenance schedules are adhered to.	Operations	Q4
2	Public Safety	Assessment	Engineering & Maintenance	H	Unrestricted access by the public to sensitive equipment and potentially hazardous sites can lead to injury of the public and damage Canals and NYPA's reputation.	Assess policies, procedures, and controls in place that limit access to and monitor Canals locations, maintenance sites, and hazardous embankments. Assess the level of Physical security access and monitoring (video surveillance) in place.	Strategic	Q2
3	Vegetation Management	Assessment	Engineering & Maintenance	H	Inadequate management of vegetation growth on Canals' property could lead to safety hazards and interfere with operations at Canals facilities.	Evaluate programs and processes in place to maintain vegetation at manageable levels at Canals sites. These programs should ensure that excessive vegetation does not interfere with normal operations, or create a safety hazard.	Operations	Q3
4	Third Party Contracts	Audit	Administrative Services	H	Third party vendor non-performance could lead to delays or failure to achieve business objectives, impairment of Canals & NYPA's reputation or potential litigation.	Identify high risk third party contracts (vendor, service provider, contractors or consultants) and exercise Internal Audit's audit rights to confirm performance in accordance with contract terms including accuracy of invoicing and contract deliverables.	Operations	Q4
5	Recruiting, Hiring and Onboarding	Audit	Administrative Services	H	Improper policies and procedures are established that do not comply with labor relations which may lead to legal or reputational risk for Canals.	Review procedures, processes and controls over recruiting, hiring and onboarding functions and labor relations. Verify compliance with established policies and procedures.	Legal and Regulatory	Q2
6	Canals Permit Management	Audit	Administrative Services	H	Inadequate controls and processes governing permits for use of the Canals could result in financial loss, legal liabilities, and damage the reputation of NYPA and Canals.	Evaluate the permit processes that govern issuance, billing, renewals, compliance, and unpermitted activities.	Financial	Q1
7	Maximo Lite Post Implementation	Assessment	Technical Services	M	Lack of effective system implementation can lead to original business objectives not meet, poor system performance, inefficiencies and user dissatisfaction.	Determine that the Maximo Lite application is functioning as intended, if business objectives have been met, efficiencies gained, system performance is adequate, organizational change management is effective and users are satisfied. Also, verify if additional changes were necessary after go live.	Operations	Q3
8	Inventory & Warehousing	Audit	Engineering & Maintenance	M	Failure to procure and maintain necessary equipment to operate Canals systems due to inadequate asset management planning, incorrect or obsolete materials in stock, inventory stock-out, and/or delays in procurement can affect daily Canals operations.	Evaluate the adequacy and effectiveness of controls for purchasing, receiving and maintaining inventory items and spare parts in Canals' warehouses.	Operations	Q1



Appendix B – Canal Corporation Audit Universe

Appendix B - 2019 – Canal Corporation Audit Universe

Administrative Services	
Audit Name	Last Audit
Budgeting and Forecasting	--
Canals Permit Management	2017
Cash Management	--
Compensation and Benefits	--
Employee Labor and Relations	--
Medical and Dental Benefits Administration	--
Operations and Maintenance (O&M) Expenses	--
Pension/Other Post Retirement Benefits	--
Real Estate	--
Recruiting, Hiring and Onboarding	--
Succession Planning/Retention Program	--
Training	--
Vendor Payment Accruals	2018
Workers Compensation and Disability	--

Engineering & Maintenance	
Audit Name	Last Audit
Asset Maintenance	--
Canals OSC Audit	2017
Capital Asset Management	--
Capital Project Management	--
Fleet Management Operations	--
Inventory & Warehousing	--
Physical Asset Verification	2017
Public Safety	--
Third Party Contracts	--
Vegetation Management	--
Waterways Safety Programs	--

Policy and Program Development	
Audit Name	Last Audit
Community Settlements	--
Grants and Sponsorships	2018

Technical Services	
Audit Name	Last Audit
Application Production/Infrastructure Support	2017
Canals Non-SAP Applications and Infrastructure	2017
CIMS System	--
Maximo Lite Post Implementation	--
User Access Management	2017

Note: There are nine shared services audits under NYPA's audit universe completed in 2017 and 2018 as follows:

- Dam Safety (2018)
- Emergency Management (2018)
- Environmental Health & Safety Program (2018)
- Expenditure Authorization Procedures (2017)
- IT Demand Management (2017)
- Payroll (2018)
- P-Card (2017)
- PCI Compliance (Lockbox) (2017)
- PCI Compliance – Website Assessment (2017)

Three one-time audits for integration activities were also completed in 2017 and not part of the audit universe, however, counted as audit coverage:

- Canals Invoice Review
- Canals TSA Management
- Pre/Post Day 1 Balance Review



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Audit Committee Update 2019 Internal Audit Budget NYPA and Canal Corporation

12/11/2018

Proposed 2019 Internal Audit Budget

	2019 Budget	2018 Budget	Explanation
*Payroll, Benefits & Consulting	\$5,217,000	\$4,990,500	<ul style="list-style-type: none"> Reflects full year of FTE costs for staff level at budget time and consulting support.
Software – Data Analytics Extraction Tool	\$8,000	\$0	<ul style="list-style-type: none"> Dollars allocated for IA to purchase data extraction tool for data analytics purposes
Training & Professional Fees	\$95,600	\$101,500	<ul style="list-style-type: none"> 40 hours professional development per team member as per IIA best practice. Reduction in training budget due to in-house training scheduled through NYPA Technical Training Group.
Travel Expenses	\$38,900	\$38,900	
Miscellaneous Office	\$12,000	\$12,000	
Total	\$5,371,500	\$5,142,900	

*Payroll and co-source support costs will change to reflect reallocation of cost once open positions are filled. The overall budget will remain substantially the same.

Internal Audit Budget Approval Request

Internal Audit requests that the Audit Committee approve the 2019 Internal Audit Budget.



New York Power Authority Report to the Audit Committee



Audit plan and strategy for the year ending December 31, 2018

December 11, 2018

This presentation to the Audit Committee is intended solely for the information and use of the Audit Committee and management and is not intended to be and should not be used by anyone other than these specified parties. This presentation is not intended for general use, circulation or publication and should not be published, circulated, reproduced or used for any purpose without our prior written permission in each specific instance.

Introduction

To the Audit Committee of the New York Power Authority

We are pleased to have the opportunity to meet with you on December 11, 2018 to discuss our audit of the consolidated financial statements of the New York Power Authority (the Authority) as of and for the year ending December 31, 2018.

The audit of the consolidated financial statements, prepared in accordance with U.S. generally accepted accounting principles (GAAP), will be conducted under the standards of U.S. generally accepted auditing standards (GAAS) and the standards applicable to financial audits contained in Government Auditing Standards issued by the Comptroller General of the United States.

We plan to issue the auditor reports on the consolidated financial statements of the New York Power Authority (the Authority) as of and for the two-year period ended December 31, 2018. Other planned audit deliverables include a report on Internal Control Over Financial Reporting and Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with Government Accounting Standards as of December 31, 2018, and a report on Investment Compliance as of December 31, 2018.

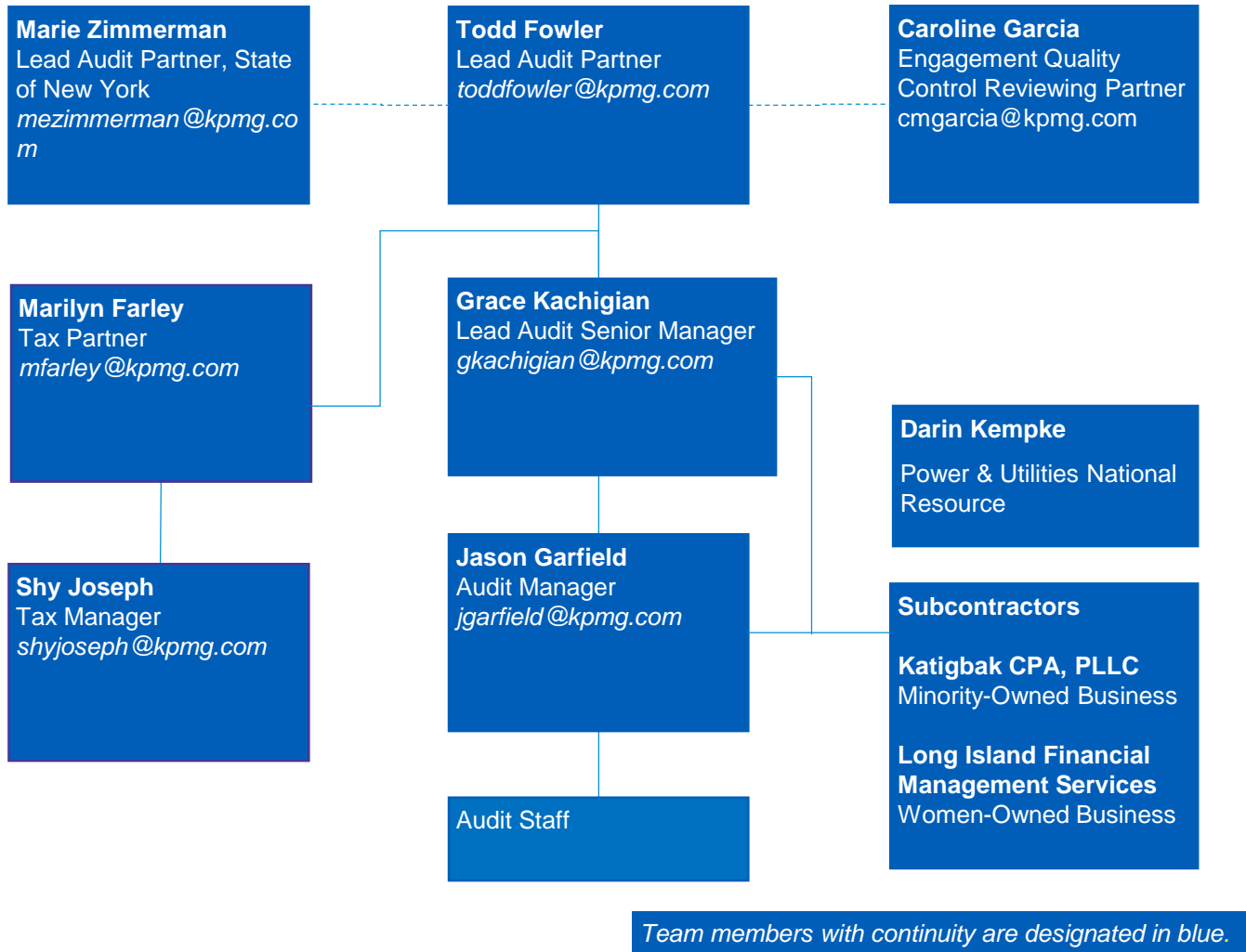
This document, which outlines our risk assessment and planned audit strategy, is being provided to you in advance of the meeting to allow you sufficient time to consider the key matters and formulate your questions.

We believe the contents of this document should provide a good platform for our discussions when we do meet. We will be pleased to elaborate further on matters covered in this document at the meeting.

Contents








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Planned timeline	6
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Client service team



Risk assessment

Relevant factors affecting our risk assessment:

Significant risks	Susceptibility to		Recent significant developments	Complexity	Related Parties	Degree of subjectivity	Outside normal course of business
	Error	Fraud					
Risk of management override of controls – Management is in a unique position to perpetrate fraud because of management's ability to manipulate accounting records and prepare fraudulent financial statements by overriding controls that otherwise appear to be operating effectively. Although the level of risk of management override of controls will vary from entity to entity, the risk nevertheless is present in all entities.							

 Yes  No

Risk assessment (continued)

Relevant factors affecting our risk assessment:

Other Significant Audit Matters	Susceptibility to		Recent significant developments	Complexity	Related parties	Degree of subjectivity	Outside normal course of business
	Error	Fraud					
Significant Estimates:							
Asset Retirement Obligation	✓	●	●	●	●	✓	●
Derivative Valuations	✓	●	●	✓	●	✓	●
Pension and Post Retirement Obligations	✓	●	✓	●	●	✓	●
Investments	✓	●	●	✓	●	✓	●
Significant Audit Areas:							
Revenue Recognition	✓	●	●	●	●	●	●
Long term debt	✓	●	●	●	●	●	●
Investments	✓	●	●	●	●	●	●
Capital Assets	✓	●	●	●	●	●	●

 Yes
  No

Audit strategy

Involvement of others

Audit of consolidated financial statements	Plan to involve?	Extent of planned involvement
Internal Audit	Y	Inquiries of Internal Audit, Review Internal Audit Plan, and Review results of Internal Audits performed
KPMG Risk Analytics Valuation Specialists	Y	Testing the valuation of Derivative Instrument selections
KPMG National Pricing Desk	Y	Testing the valuation of Investments

Y Yes N No

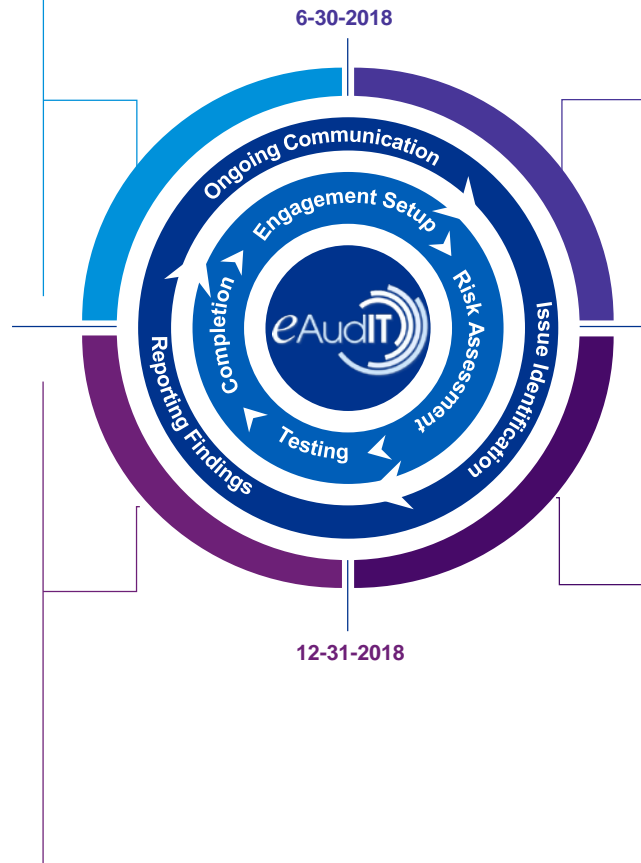
Planned timeline

- Debrief on audit process
- Plan audit approach for upcoming year-end audit
- Identify key members of the engagement team, including specialists

- Meetings with management to discuss key issues
- Assessment of business processes and high-level controls
- Identify specific and pervasive financial statement fraud risks and assess the effect on the audit plan
- Perform risk assessment procedures and identify risks
- Assessment of audit risk and planning of substantive audit procedures
- Determine audit strategy and identify critical accounting matters
- Plan Audit Procedures

3-31-2019

- Complete control testing for relevant process level and entity-level controls, where applicable
- Perform remaining substantive audit procedures
- Review financial statement disclosures
- Evaluate results of audit procedures including control deficiencies and audit misstatements identified
- Obtain written representation from management
- Present audit results to the Audit Committee and perform required communications
- Issue audit reports on consolidated financial statements



9-30-2018

- Finalize planned audit approach
- Perform walkthroughs of NYPA processes
- Test NYPA's entity-wide and monitoring controls
- Evaluate design of selected key controls at NYPA
- Test operating effectiveness of selected key controls at NYPA
- Perform interim substantive procedures
- Evaluation of interim results and establish plan for performance of substantive audit procedures
- Perform / send year-end confirmations (e.g. legal, debt, cash, investments, and derivatives)
- Conduct management interviews related to fraud risk
- Present 2018 Audit Plan to the Audit Committee

12-31-2018



Supplemental communications

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Independence	14
Required communications and other matters – inquiries	18



Audit fees

	2018 estimated	2017 actual
Audit of the consolidated financial statements for the New York Power Authority as of and for the two-year period ended December 31, 2018	\$352,500	\$373,500
<u>Other Reports (included in the fees above):</u> Report on Internal Control Over Financial Reporting and Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with Government Accounting Standards as of December 31, 2018 Report on Investment Compliance as of December 31, 2018		
Total fees	\$352,500	\$373,500

The following reports will be billed separately:

- Report on Compliance with Requirements That Could Have a Direct and Material Effect on Each Major Program and on Internal Control over Compliance in Accordance with Uniform Guidance (formerly OMB Circular A-133), if applicable
- Revenue Bonds issuance consent and comfort letter, if applicable

Materiality in the context of an Audit

We will apply materiality in the context of the preparation and fair presentation of the consolidated financial statements, considering the following factors:

Professional standards require that we exercise professional judgment when we consider materiality and its relationship with audit risk when determining the nature, timing, and extent of our audit procedures, and when evaluating the effect of misstatements.

Information is material if its misstatement or omission could reasonably be expected to influence the economic decisions of users taken on the basis of the consolidated financial statements.

Judgments about materiality are made in light of surrounding circumstances and are affected by the size or nature of a misstatement, or a combination of both.

Judgments about matters that are material to users of the consolidated financial statements are based on a consideration of the common financial information needs of users as a group. The possible effect of misstatements on specific individual users, whose needs may vary widely, is not considered.

Judgments about the size of misstatements that will be considered material provide a basis for

- a) Determining the nature and extent of risk assessment procedures;
- b) Identifying and assessing the risks of material misstatement; and
- c) Determining the nature, timing, and extent of further audit procedures.

Responsibilities

Management responsibilities – Consolidated financial statements	<ul style="list-style-type: none"> — Fairly presenting the financial statements, including disclosures in conformity with U.S. GAAP — Adjusting the financial statements to correct material misstatements and affirming in the representation letter that the effects of any uncorrected misstatements aggregated by the auditor are immaterial, both individually and in the aggregate, to the financial statements taken as a whole
Management responsibilities – ICOFR	<ul style="list-style-type: none"> — Design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.
Management responsibilities – Other	<ul style="list-style-type: none"> — To provide the auditor with: <ul style="list-style-type: none"> (1) access to all information of which management is aware is relevant to the preparation and fair presentation of the consolidated financial statements, such as records, documentation, and other matters; (2) additional information that the auditor may request from management for the purpose of the audit; and (3) unrestricted access to persons within the Authority from whom the auditor determines it necessary to obtain audit evidence — Identifying and ensuring that the Authority complies with laws and regulations applicable to its activities, and for informing the auditor of any known material violations of such laws and regulations — Providing the auditor with a letter confirming certain representations made during the audit, that includes but is not limited to management's: <ul style="list-style-type: none"> (1) disclosure of all significant deficiencies, including material weaknesses, in the design or operation of internal controls that could adversely affect the Authority's financial reporting (2) acknowledgement of their responsibility for the design and implementation, and maintenance of internal controls to prevent and detect fraud
Audit Committee responsibilities	<ul style="list-style-type: none"> — Oversight of the financial reporting process and ICOFR — Oversight of the establishment and maintenance by management of programs and controls designed to prevent, deter, and detect fraud
Management and the Audit Committee responsibilities	<ul style="list-style-type: none"> — Setting the proper tone and creating and maintaining a culture of honesty and high ethical standards — Ensuring that the Authority's operations are conducted in accordance with the provisions of laws and regulations, including compliance with the provisions of laws and regulations that determine the reported amounts and disclosures in the Authority's consolidated financial statements.

The audit does not relieve management or the Audit Committee of their responsibilities.

Responsibilities (continued)

KPMG – Audit objectives	<ul style="list-style-type: none"> — The objective of an audit of the consolidated financial statements is to enable the auditor to express an opinion about whether the consolidated financial statements that have been prepared by management with the oversight of the Audit Committee are presented fairly, in all material respects, in conformity with generally accepted accounting principles (GAAP), including Government Accounting Standards, as issued by the Government Accounting Standards Board (GASB). — We plan and perform the audit to obtain reasonable, rather than absolute, assurance about whether the consolidated financial statements taken as a whole are free from material misstatement, whether due to fraud or error. — Our audit includes: <ul style="list-style-type: none"> Performing tests of the accounting records and such other procedures, as we consider necessary in the circumstances, based on our judgment, including the assessment of the risks of material misstatement, to provide a reasonable basis for our opinion. Evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, and evaluating the overall presentation of the consolidated financial statements.
KPMG responsibilities – Audit	<ul style="list-style-type: none"> — Forming and expressing an opinion about whether the consolidated financial statements that have been prepared by management, with the oversight of the Audit Committee, are presented fairly, in all material respects, in conformity with GAAP. — Planning and performing our audit with an attitude of professional skepticism to obtain reasonable—not absolute—assurance about whether the consolidated financial statements are free of material misstatement, whether caused by fraud or error. Because of the nature of audit evidence and the characteristics of fraud, we are able to obtain reasonable, but not absolute, assurance that material misstatements will be detected. Our audit is not designed to detect error or fraud that is immaterial to the consolidated financial statements. — Conducting the audit in accordance with professional standards and complying with the Code of Professional Conduct of the American Institute of Certified Public Accountants, and the ethical standards of relevant CPA societies and relevant state boards of accountancy. — Evaluating ICFR as a basis for designing audit procedures, but not for the purpose of expressing an opinion on the effectiveness of the Authority's ICFR. — Communicating to management and the Audit Committee all required information, including significant matters. — Communicating to management and the Audit Committee in writing all significant deficiencies and material weaknesses in internal control identified during the audit and reporting to management all deficiencies noted during our audit that are of sufficient importance to merit management's attention. The objective of our audit of the consolidated financial statements is not to report on the Authority's internal control and we are not obligated to search for material weaknesses or significant deficiencies as part of our audit of the consolidated financial statements.

Responsibilities (continued)

KPMG responsibilities – Other information in documents containing consolidated financial statements	<ul style="list-style-type: none">— The auditors' report on the consolidated financial statements does not extend to other information in documents containing the audited consolidated financial statements, excluding required supplementary information.— We are required to:<ul style="list-style-type: none">-Read the other information to identify material inconsistencies with the audited consolidated financial statements or material misstatements of fact, and-Make appropriate arrangements with management or the Audit Committee to obtain the other information prior to the report release date.— Any material inconsistencies or misstatements of fact that are not resolved prior to the report release date, and that require revision of the other information, may result in KPMG modifying or withholding the auditors' report or withdrawing from the engagement.
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Responsibilities (continued)

**KPMG
responsibilities –
Communications**

- Communicating significant matters related to the financial statement audit that are in our professional judgment, relevant to the responsibilities of the Audit Committee in overseeing the financial process. U.S. GAAS does not require us to design procedures for the purpose of identifying matters to communicate to the Audit Committee
- Communicating if we suspect or identify noncompliance with laws and regulations exist, unless matters are clearly inconsequential
- Communicating to management and the Audit Committee in writing all significant deficiencies and material weaknesses in internal control identified during the audit, including those that were remediated during the audit and reporting to management in writing all deficiencies noted during our audit that, in our professional judgment, are of sufficient importance to merit management's attention. The objective of our audit of the consolidated financial statements is not to report on the Authority's internal control
- Conducting the audit in accordance with professional standards and complying with the rules and responsibility of the Code of Professional Conduct of the American Institute of Certified Public Accountants and the official standards of relevant CPA Societies, and relevant state boards of accountancy
- Communicating to the Audit Committee circumstances, if any, that affect the form and content of the auditors' report
- Communicating if we plan to withdraw from the engagement and the reasons for the withdrawal
- Communicating to the Audit Committee if we conclude no reasonable justification for a change to the audit engagement exists and we are not permitted by management to continue the original audit engagement
- Communicating to the Board of Directors in writing any conclusion(s) that the Audit Committee's oversight of external financial reporting and internal control over financial reporting is ineffective
- When applicable, we are also responsible for communicating particular matters required by law or regulation, by agreement with the Authority, or by additional requirements applicable to the engagement
- Communicating if we have identified or suspect fraud involving; (a) management, (b) employees who have a significant role in internal control, (c) others, when the fraud results in a material misstatement in the consolidated financial statements, and (d) other matters related to fraud that are, in the auditors' professional judgment, relevant to the responsibilities of the Audit Committee
- Communicating significant findings and issues arising during the audit in connection with the Authority's related parties.

KPMG independence quality controls

KPMG maintains a comprehensive system of quality controls designed to maintain our independence and to comply with regulatory and professional requirements.

- Submission of all worldwide engagements through Sentinel, a KPMG independence and conflict checking system (includes services for/relationships with the audit client, its affiliates, and its affiliated persons)
- Tracking partner rotation requirements using PRS (Partner Rotation System), the firm's automated partner rotation tracking system
- Automated investment tracking system used by all KPMG member firms (KICS)
- Training and awareness programs, including a required annual independence training deployed globally
- Annual independence confirmation required for all existing partners and employees and for all new individuals who subsequently join the firm
- Compliance testing programs
- Formal disciplinary policy and process
- Annual reporting to the Audit Committee regarding independence

Independence of mind and appearance

- Independence consists of independence of mind and in appearance. Independence in appearance is the avoidance of circumstances that would cause a reasonable and informed third party who has knowledge of all relevant information, including safeguards applied, to reasonably conclude that the integrity, objectivity, or professional skepticism of the firm or members of the audit engagement team is compromised.
- Close personal relationships between firm personnel and audit client personnel can impact the appearance of independence or an auditor's independence of mind.
- KPMG has issued reminders and conducted training regarding KPMG's existing policies that require interactions between firm personnel and audit client personnel (including client entertainment) be directly related to a business purpose, reasonable, and infrequent (i.e. generally no more than four times a year). Additionally, firm policies prohibit the receipt or granting of any gift with a value in excess of \$100 between firm and audit client personnel.

Independence

Services or other relationships that may reasonably be thought to bear on independence include:

Relationship or non-audit service	Description of relationship/service	Expected Fees (for services)
Mergers and Acquisition Services	Assist the Power Authority of the State of New York with their post-merger integration of the New York State Canal Corporation's HR function	\$200,000 for Phase 1 \$650,0000 for Phase 2

In our professional judgment, we are independent with respect to the Authority, as that term is defined by the professional standards.

Breaches of independence

KPMG policies regarding breaches of independence:

- For any breaches of the Independence rules, as soon as practicable KPMG will:
 - Assess the impact of the breach
 - Identify the actions performed or to be performed to address the consequences of the breach
 - Communicate in writing and discuss the breach and actions to address the breach with the Audit Committee
 - Obtain concurrence from the Audit Committee on the auditor's conclusion regarding the breach (i.e. that the actions taken satisfactorily address the consequences of the breach and the impact of the breach on KPMG's objectivity and impartiality with respect to the audit)
 - Document the details of the breach, the actions described above and the result

Inquiries

Audit Committee inquiries	<ul style="list-style-type: none">— Is the Audit Committee aware of matters relevant to the audit, including, but not limited to, violations or possible violations of laws and regulations?— What are the Audit Committee's views about fraud risks in the Authority?— Does the Audit Committee have knowledge of fraud, alleged fraud, or suspected fraud affecting the Authority?— Who is the appropriate person (Audit Committee chair or full Audit Committee) for communication of audit matters during the audit?— How are responsibilities allocated between management and the Audit Committee?— What are the Authority's objectives and strategies and related business risks that may result in material misstatements?— Are there any areas that warrant particular attention during the audit and additional procedures to be undertaken?— Is the Audit Committee aware of any significant communications with regulators?— What are the Audit Committee's attitudes, awareness, and actions concerning (a) the Authority's internal controls and their importance in the Authority, including oversight of effectiveness of internal controls, and (b) detection of or possibility of fraud?— Is the Audit Committee aware of any developments in financial reporting, laws, accounting standards, corporate governance, and other related matters?— Have there been any actions taken based on previous communications with the auditor?
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Questions?

For additional information and Audit Committee resources, including Director Roundtable Series in approximately 25 cities each Spring, a Quarterly webcast, and suggested publications, please visit KPMG's Audit Committee Institute (ACI) at www.kpmg.com/ACI.

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