MANAGEMENT AUDIT ANNUAL REPORT

November 17, 2021

LIPA
Long Island Power Authority

OVERVIEW

- In June 2018, the Department of Public Service ("DPS") management and operations audit made 49 recommendations (the "Audit Recommendations") to LIPA or PSEG Long Island.

- DPS directed LIPA Internal Audit to:
  - Evaluate progress on all 49 DPS-approved implementation plans;
  - Document completion of plans and those still in progress;
  - Highlight any revisions to completion targets; and
  - Report on the status to the LIPA Board of Trustees at least annually.

IMPLEMENTATION PROGRESS SINCE OCTOBER 24, 2018

- Of the 49 Audit Recommendations, LIPA's Internal Audit department has tested 39. During 2021, LIPA deemed 3 of the 39 to remain In-Progress.

- Once the remaining 13 Audit Recommendations are deemed completed, LIPA Internal Audit will test that determination.

- Since 2018, LIPA has performed other work, including oversight projects, internal audits, and work stemming from Tropical Storm Isaias, and determined that additional improvement is still needed for the following key Audit Recommendations:

Asset Management	Emergency Storm Training
Capital Project Estimating	Workforce Management

- LIPA's Board of Trustees has adopted recommendations for improvement in these areas and PSEG Long Island will be required to implement those recommendations.

ASSET MANAGEMENT

- Audit Recommendation directed PSEG Long Island to complete development of a Centralized Maintenance Management System to allow PSEG Long Island to leverage asset health data more effectively/efficiently.

- In 2019, LIPA engaged an internationally recognized asset management consulting firm to independently review PSEG Long Island's processes and recommend improvements.

- PSEG Long Island's asset management and maintenance functions are still fragmented and do not provide an enterprise-wide understanding of system assets.

- Board recommendation highlights:
  - Adopt the ISO Asset Management Framework
  - Annual Reliability Assessment of Plant Asset Performance
  - Implement an Enterprise Asset Management System

EMERGENCY RESPONSE TRAINING

- Audit Recommendations directed PSEG Long Island to complete and improve its Emergency Response Training.

- Following Isaias, LIPA concluded that actual performance during the August 2020 tropical storm revealed the need for additional improvements in this area.

- Board recommendation highlights:
  - improve emergency planning governance so that utility-wide emergency training is under a single emergency planning team; and
  - develop more rigorous emergency response training and exercises to (a) test decision making, decision paths, and how information passes between functions, and (b) exercise well-developed business continuity plans.

CAPITAL PROJECT ESTIMATING

- Audit Recommendations directed PSEG Long Island to address the deficiencies in project estimating by making organizational and process improvements.

- Board recommendation highlights:
  - require PSEG Long Island to submit to LIPA a complete project justification description form outlining the project scope, schedule, cost information, and benefits;
  - establish a process for addressing projects that were in a preliminary stage of development as well as providing for updates to LIPA on project and capital budget changes; and
  - establish a Capital Budget Working Group to develop a policy to govern the inclusion of Risk and Contingency in a project's cost estimate.

- In addition to the Board recommendations, LIPA's Internal Audit department performed an audit of PSEG Long Island's project estimating practices and observed that their risk and contingencies, in the final estimate phase, was higher compared to other utilities.

WORKFORCE MANAGEMENT

- Audit Recommendations directed PSEG Long Island to develop an integrated work management system covering all PSEG Long Island operations, maintenance and construction resources, and fill gaps in the current management information reporting and organizational reporting relationships to support such a system.

- Board recommendation highlights:
  - Develop processes and systems to improve planning and tracking of work;
  - Improve and standardize estimating, compatible unit estimates, and task list management; and
  - Implement aligned annual work plan and short-term scheduling and dispatch.

- In addition to the Board recommendations, LIPA's Internal Audit department is concluding an audit of PSEG Long Island's work management practices which has several material observations and recommendations for improvement.

NEXT STEPS

- Internal Audit will continue to test the completion of all implementation plans through commencement of the next DPS audit.
- LIPA and PSEG Long Island continue to respond to DPS Information Requests for documentation on implementation plan progress.
- LIPA management continues to oversee efficacy of completed implementation plans and recommend modifications, as necessary.
- LIPA management continues to make recommendations for improvement across the organization with new projects, audits, or project implementation plans.


Questions?

FOR CONSIDERATION
November 17, 2021

TO: The Board of Trustees

FROM: Kathleen H. Mitterway, Senior Advisor for Audit

SUBJECT: Consideration of Adoption of Report Detailing the Status of the Implementation Plan and Results of the Annual Audit - 2018 NorthStar Management Audit

Requested Action

The Board of Trustees (the "Board") of the Long Island Power Authority ("LIPA") is requested to approve a resolution adopting this report detailing the status of the implementation plan and results from the 2018 NorthStar Management Audit.

Background

On June 29, 2018, NorthStar's Final Management Audit Report was released with 49 recommendations. Recommendation #3 was that "LIPA Internal Audit should perform a comprehensive audit of the implementation status of all audit recommendations annually until the next DPS audit is performed."

The LIPA Board of Trustee's Policy on Audit Relationships establishes the Board's expectations for Internal Audit's review. Each annual review includes: a summary of the activities completed to date and any revisions to completion targets; and a review of the effectiveness of the implementation plan in addressing each audit recommendation after the completion of the implementation plan for that recommendation. This report is Internal Audit's third annual review of the implementation of the management audit.

The status of the 49 NorthStar Management Audit recommendations are summarized in the **APPENDIX "A"** – Management & Operations Audit Implementation Plan Progress Report to the LIPA Board of Trustees.

Summary Observations based on testing performed from September 2020 to November 17, 2021

Internal Audit completed the review of 39 of the 49 NorthStar Management Audit recommendations. During 2021, LIPA deemed 3 of the 39 to remain In-Progress. Our testing identified three recommendations where additional supporting documentation was required, which was subsequently remediated. The review of an additional 13 recommendations is expected to be completed in 2022.

In addition to Internal Audit's testing, LIPA's Operations Oversight Department identified thirteen recommendations where Board recommendations or adopted Project

Implementation Plans will enhance the existing deliverables.

Internal Audit is also collaborating and incorporating comments by the Department of Public Service (DPS) into our review of the effectiveness of the implementation plans in addressing the NorthStar Management Audit recommendations.

Where required, Internal Audit will revisit the completed recommendations to ensure the management action plans are operating and functioning as intended.

Summary of Annual Audit Results

Recommendation #2
LIPA and PSEG LI should develop an implementation plan for all audit recommendations (new recommendations and outstanding recommendations that LIPA, PSEG Long Island and DPS determine remain relevant) within 90 days of the Final Audit Report acceptance and submit the implementation plan to the LIPA Board of Trustees and the DPS. The Report could take the form required of the investor-owned utilities.

Test Procedures Performed and Test Results:
Reviewed supporting documentation to ascertain that:

- LIPA and PSEG Long Island filed an implementation plan with the LIPA Board of Trustees and DPS on October 24, 2018.
- LIPA submitted an Implementation Plan Progress Report to the LIPA Board of Trustees, posted the report on the LIPA website, and filed the report with DPS on September 23, 2020.

No exceptions noted.

Recommendation #3
LIPA Internal Audit should perform a comprehensive audit of the implementation status of all audit recommendations annually until the next DPS audit is performed. The results of LIPA's audit should be submitted to LIPA executive management, the LIPA Board of Trustees, PSEG Long Island, and the DPS. Within each LIPA audit:

- An evaluation of progress performance should be included.
- A progress tracking document should show activities completed to date and those in process.
- Any revisions to completion targets should be highlighted for management review.

Test Procedures Performed and Test Results:
Reviewed supporting documentation to ascertain:
The submission of the second annual report to the Oversight and Clean Energy Committee of the Board, the DPS, and PSEG Long Island of the status of the implementation plan and the results of the initial annual audit on September 23, 2020.

No exceptions noted.

Recommendation #4
LIPA Financial Oversight should formally document the results of its PSEG Long Island oversight activities and assessment process annually with submission to LIPA/PSEG Long Island executive management as well as DPS.

Test Procedures Performed and Test Results:
Reviewed supporting documentation to ascertain:
The 2020 Oversight Activity Reports were provided to DPS and LIPA.

No exceptions noted.

Recommendation #5
LIPA should formally request appointments or confirm extensions to Board member term periods at least six months prior to term expirations.

Test Procedures Performed and Test Results:
Reviewed supporting documentation to ascertain:
The schedule prepared of trustee term expiration dates, calendar notification reminders of expirations and letters sent to the appropriate approving authorities at least six months prior to term expirations.

No exceptions noted.

Recommendation #10
Complete the process of upgrading LIPA's financial system.

Test Procedures Performed and Test Results:
Reviewed supporting documentation to ascertain:
- The Microsoft Dynamics Finance and Operations System Configuration and Integration, Data Conversion and Verification, System Testing and Training, Go Live and Post-implementation support.

No exceptions noted.

Recommendation #11
Determine the feasibility and cost of establishing interfaces between PSEG LI's MicroStrategy, PCM, and SAP systems to eliminate the need for manual data transfer processes. If cost effective, implement processes to allow electronic data transfer between the systems.

Test Procedures Performed and Test Results:
Reviewed supporting documentation to ascertain:
- PSEG Long Island management has a process in place to load budget data into SAP from the Profitability and Cost Management (PCM) system.

Observations were noted relating to supporting documentation and were subsequently remediated and validated.

Recommendation #12
LIPA should build on its recent success in "homogenizing" groups of debt covenants to increase consistency among other debt instruments.

Test Procedures Performed and Test Results:
Reviewed supporting documentation to ascertain:

- Debt covenants were "homogenized" to increase consistency among other debt instruments.

No exceptions noted.

Recommendation #14
Perform detailed cost-benefit analyses consistent with Transmission Planning's analyses for projects related to thermal overload.

Test Procedures Performed and Test Results:
Reviewed supporting documentation to ascertain:

- Internal and external stakeholders were identified, including LIPA and the Department of Public Service (DPS).
- Feedback was solicited from PSEG Long Island internal stakeholders, LIPA and DPS.
- The cost/benefit analysis approach was reviewed and a Cost Benefit Analysis User Guide and training material were created.
- Relevant personnel were trained.
- The new procedure was implemented.

Observations were noted relating to supporting documentation and were subsequently remediated and validated.

Recommendation #22
Develop and implement procedures related to quality assurance and quality controls for capital programs and projects.

Test Procedures Performed and Test Results:
Reviewed supporting documentation to ascertain:

- A Quality Assurance/Quality Control (QA/QC) Program Leader has been established within the Project Management Organization (PMO).
- Roles and responsibilities for the QA/QC Program have been defined.
- Written procedures for the QA/QC function have been created.
- PMO and Projects & Construction personnel have been trained on the new QA/QC Procedures.

No exceptions noted

In addition, Internal Audit performed an audit of PSEG Long Island Electric Expansion Projects – Capital Project Estimating & Playbook Procedures related to Recommendations 22 through 26. Recommendations included revising risk and contingency percentages, enhancing the scheduling tool and implementing a portfolio management system.

Recommendation #23

Address the deficiencies in project estimating by making organizational and process improvements and creating a capital project estimating function/organization equipped with appropriate tools.

- Establish an organizational group of professional estimators for transmission and distribution that will develop estimates for planning, engineering and construction.
- Use these internal estimators to set and validate baseline estimates established for contractors.
- Assess the process used to develop and update estimates for completion.
- Establish project estimating tools such as a formal data base of project estimates and support tools such as software and develop and manage an estimating data true-up process.
- Review and document inflation and escalation factors and analyses used to predict project completion costs for each project estimate.
- Review project budget numbers and cost reporting information to determine whether they represent the most currently approved budget and cost data.
- Determine whether cost and schedule systems are integrated and whether the project master schedule is appropriately integrated with the approved project budget.
- Formally document project cost reviews at each level of estimate in detail and at various stages of project completion as called for in Project Cost Management (Procedure TD-PM-002-0004).
- Review project guidelines for performing trend analyses and exception reporting.
- Evaluate how trends were identified, analyzed, brought to management's attention, and how they were resolved.
- Determine whether cost control systems, forecasting and trend analyses directed attention to bulk rates, commodities and productivity to reveal above/below average performance.
- Continuously verify the accuracy of estimates versus the actual project cost and maintain a record of updates to the estimating database.

Test Procedures Performed and Test Results:

Reviewed supporting documentation to ascertain:

- Documentation describing the review of inflation and escalation factors, including examples of analyses used.
- The process used to develop and update estimates for completion.

- Documentation describing how the estimating team establishes and validates baseline estimates for contractor work.
- How project cost reviews are performed at each level of estimate and during project completion, as required by procedures.
- How project budgets and actual cost information are reviewed.
- That an estimating team has been established.
- How trends were identified, analyzed, brought to management's attention, and how they were resolved.
- The establishment of project estimating tools and an estimating true-up process.
- The process to verify the accuracy of estimates versus actual project costs.
- How the project master schedule is integrated with the approved project budget, and obtained an example.
- How the project master schedule is integrated with the approved project budget, and obtain an example.
- That cost control systems, forecasting and trend analysis identified bulk rates, commodities and productivity to determine whether performance was above or below average.
- How project guidelines for trend analysis and exception reporting were reviewed.

Observations were noted relating to supporting documentation and were subsequently remediated and validated.

In addition, Internal Audit performed an audit of PSEG Long Island Electric Expansion Projects – Capital Project Estimating & Playbook Procedures related to Recommendations 22 through 26. Recommendations included revising risk and contingency percentages, enhancing the scheduling tool and implementing a portfolio management system.

Recommendation

Based upon the foregoing, I recommend approval of the above requested action by adoption of a resolution in the form attached hereto.

Attachments

Exhibit "A"	Resolution
Appendix "A"	Management & Operations Audit Implementation Plan Progress Report to the LIPA Board of Trustees.

Exhibit "A"

RESOLUTION ADOPTING THE REPORT DETAILING THE STATUS OF THE IMPLEMENTATION PLAN AND RESULTS FROM THE 2018 NORTHSTAR MANAGEMENT AUDIT

NOW, THEREFORE, BE IT RESOLVED, that the Board of Trustees of the Long Island Power Authority hereby adopts the report, as provided in the accompanying memorandum, detailing the status of the implementation plan, results from the 2018 NorthStar Management Audit, and describing additional activities Staff has undertaken to enhance performance in certain areas of the business.

Dated: November 17, 2021

Appendix "A"

MANAGEMENT & OPERATIONS AUDIT IMPLEMENTATION PLAN PROGRESS REPORT to the LIPA BOARD of TRUSTEES

LONG ISLAND POWER AUTHORITY and PSEG LONG ISLAND

Department of Public Service Matter No. 16-01248

November 17, 2021

Introduction

On December 15, 2016, the New York State Department of Public Service (the "Department" or "DPS") announced it had selected NorthStar Consulting Group, (NorthStar), to perform a comprehensive management and operations audit of the Long Island Power Authority ("LIPA") and PSEG Long Island LLC pursuant to Public Service Law (PSL) §3- b(3)(d) and the Public Authority Law (PAL) §1020-f(bb), which provided that an audit be concluded by June 2018, and be re-conducted thereafter every five years. NorthStar conducted the audit under supervision of DPS staff in a manner identical to such audits of investor-owned utilities ("IOUs") in the State. See PSL §66(19).

DPS directed NorthStar to study fourteen areas of operations and management against LIPA's duty to set rates at the lowest level consistent with standards and procedures provided in PAL §1020-f(u). Between January 2017 and March 2018, LIPA and PSEG Long Island provided NorthStar and DPS staff over 4 terabytes of data consisting of 5,000 individual documents in response to a total of 1,018 Document Requests ("DRs"). Additionally, auditors conducted over 220 interviews with LIPA and PSEG Long Island management, staff, and LIPA Trustees.

On June 29, 2018, NorthStar's Final Report was released with 49 recommendations. The Report further identified certain recommendations from NorthStar's previous audit in 2013 that the auditors recommended should be reviewed jointly with DPS staff to determine the relevance for further implementation.

On July 25, 2018, the LIPA Board of Trustees accepted every audit recommendation and directed LIPA and PSEG Long Island to develop implementation plans for Board approval within 90 days, following procedures identical to those applicable to IOUs. See PAL §1020-f(bb). Following consultation with DPS, LIPA and PSEG Long Island set forth their implementation plan to the LIPA Board on October 24, 2018.

A. Summary of Recommendations and Audit Implementation Plan

NorthStar's 49 recommendations and the status of each implementation plan is set forth in the body of the report following this introduction. Pursuant to DPS' recommendation, this report conforms in format to periodic reports filed by IOUs.

Since 2018, LIPA and PSEG Long Island have also coordinated with staff at DPS by providing regular progress reports, supporting documentation, and written responses to questions as implementation plans were completed. DPS has also provided substantive comments and recommendations on certain audit recommendations.

Further, in compliance with NorthStar's Final Report, LIPA Internal Audit has tested implementation plans deemed complete and issued its own annual progress report to the Board. To date, of the 49 audit recommendations, LIPA's Internal Audit department has tested 39 for completion of implementation plan steps. During 2021, LIPA deemed 3 of the 39 to remain In-Progress. Once all steps in the remaining 13 implementation plans are reported completed, LIPA Internal Audit will test those as well.

In addition, the LIPA Board has adopted 167 recommendations to improve PSEG Long Island management, information technology, and operations and tasked LIPA staff with reporting quarterly to the Board on status until all issues are remediated. The most recently Quarterly Report from September 2021 is available on LIPA's website. In certain areas, the recommendations overlap with findings in the 2018 or 2013 NorthStar audits, which has been noted in this report. Greater detail is available on these recommendations and the status of their implementation in the Quarterly Report.

Finally, LIPA has commenced internal audits of PSEG Long Island Capital Project Estimating and Workforce Management Productivity, while other LIPA departments' projects and reviews include studies of PSEG Long Island overtime controls and timekeeping process and Fixed Assets, which were findings in prior NorthStar audits.

B. Audit Recommendations and Status as of October 29, 2021.

Table 1 lists those Management Audit implementations plans that LIPA deems to remain In Progress based on the assessments summarized in the LIPA Oversight Comments column below, and in the Feedback field appearing at the end of each implementation plan detail following this introduction.

Table 1

Management Audit Recommendation Number Summary	LIPA Oversight Comments on Progress Implementing Management Audit Recommendation Objectives
Recommendation No. 6 Continue development of a LIPA/PSEG LI Enterprise Risk Management (ERM) program	In 2013, management auditors recommended the creation of an Enterprise Risk Management (ERM) program that assessed risks posed to the entire utility, development of mitigation strategies, and application of those strategies in an enterprise-wide manner. The 2018 Management Audit Report found significant progress in this area and recommended that LIPA and PSEG Long Island continue to collaborate in the development of a mature ERM program. The Isaias Task Force found that PSEG Long Island did not share critical information regarding certain identified risks to LIPA senior leadership or the LIPA-PSEG Long Island ERM program. Most notable was PSEG Long Island's management failure to alert LIPA of identified issues arising from the utility's long-delayed upgrade of its Outage Management System ("OMS"). See Tropical Storm Isaias 90-Day Report (November 18, 2020). The OMS collapsed during Isaias thereby delaying restoration efforts. To address these issues, the LIPA Board of Trustees adopted a series of recommendations regarding ERM. Among these was a new requirement for the inclusion of LIPA Subject Matter Experts in risk analyses and discussions with PSEG Long Island personnel. Further, the recommendations include the designation of management level risk owners, the establishment of a joint ERM SharePoint, and development and presentation of an annual report. These new enhancements to the Management Audit's ERM recommendation have now been completed.

Management Audit Recommendation Number Summary	LIPA Oversight Comments on Progress Implementing Management Audit Recommendation Objectives
	Going forward, additional enhancements are planned and will include the development of regular "deep dive" analysis and reporting on risk and risk mitigation, development of a risk correlation matrix for a designated risk, development, and facilitation of ERM risk training, and an established procedure to escalate to senior leadership at LIPA and PSEG Long Island major risks as they are identified. LIPA has also proposed metrics for 2022 to incentivize further improvements to PSEG Long Island's ERM program.
Recommendation No. 7 Continue to develop and implement the SOS capital program optimization model and expand the use of SOS to other business areas, including IT and Customer Operations.	In 2017, PSEG Long Island began using a third-party vendor product known as the Spend Optimization Suite (SOS) to support capital prioritization decision processes. NorthStar auditors noted that while PSEG Long Island's use of SOS in selecting projects for the 2018 capital budget was "a good start," SOS had only been implemented on a "pilot" basis and procedures remained under development. While several implementation steps have been completed, LIPA has not been provided evidence that an operational SOS program is currently being used in areas beyond what was noted in the 2018 Management Audit. Accordingly, LIPA deems the implementation of this recommendation to remain In Progress pending LIPA's Independent Verification and Validation (IV&V) that the optimization tool is in fact operational in IT and Customer Operations, and pending completion of LIPA Internal Audit testing. Finally, LIPA staff continues to review the current use of the SOS tool and LIPA is currently evaluating other tools used by other utilities that can provide enterprise-wide prioritization and optimization.
Recommendation No. 9 Update the PSEG Long Island budget procedure to include the determination of incremental operations and maintenance (O&M) expenses associated with new construction.	PSEG Long Island's current capital budget procedure still does not adequately address and quantify incremental operations and maintenance (O&M) costs associated with capital projects. NorthStar noted in 2018 that such a process is needed to enable PSEG Long Island to better determine if annual operating budgets could support all necessary expenditures of completed capital projects. PSEG Long Island does evaluate O&M impacts as capital projects near their in-service date. However, consistent with the Management Audit Report, LIPA had recommended that PSEG Long Island develop and implement a capital project impact analysis process that will include an assessment of discernable O&M impacts at the design phase, address qualitative impacts, such as customer benefits and enhanced system reliability for applicable capital projects. The analysis should include a framework for conducting a quantitative analysis and documenting qualitative benefits. The implementation of this recommendation, therefore, remains In Progress. Pursuant to LIPA Board-adopted recommendations, capital projects subject

Management Audit Recommendation Number Summary	LIPA Oversight Comments on Progress Implementing Management Audit Recommendation Objectives
	to the enhanced analysis are major projects proposed for approval in the 2023 budget cycle, herein defined as projects either (i) having a total project cost of $25.0 million or greater or (ii) projects that would reasonably be expected to have an operating budget impact when implemented of $1.0 million or greater (cost or savings) on an annual basis when fully implemented. LIPA has also proposed a 2022 metric for further development of this process.
Recommendation No. 13 Develop evaluative criteria or other measures to assess the effectiveness of the planning process.	Management Audit recommendations in 2013 and 2018 pointed to needed reforms in capital project optimization, capital project estimating, risk and contingency management, project management performance reporting, the definition and quantification of work standards, and other areas that contribute to the development and management of capital projects and the capital budget. LIPA deems implementation of this recommendation still In Progress and has taken the following course of action. On August 11, 2021, the LIPA Board of Trustees, with input from PSEG Long Island and the recommendation of LIPA Staff, adopted a Project Implementation Plan (PIP) for Capital Budget Development and Monitoring Process Improvements to formerly document the annual process related to the capital project and budget/8-year Financial Plan. An improved process governing Capital Budget and Capital Project review and approval, including managing changes during the year, will enhance transparency and accountability of customer funds and ensure adequate information flow to LIPA to conduct oversight on behalf of our customers. The PIP includes the following: (1) PSEG Long Island must complete Project Justification Descriptions ("PJDs") for a capital project to be considered by the LIPA Board for inclusion in the LIPA Consolidated Budget and any project added during the year. (2) If PSEG Long Island is unable to provide a full and complete PJD prior to consideration of the Capital Budget by the LIPA Board, PSEG Long Island may submit a preliminary PJD as part of its Capital Budget request, which LIPA may recommend to the Board on a contingent basis, therefore outside of the PSEG Long Island Capital Budget. (3) PSEG Long Island should provide LIPA with annual updates to PJDs highlighting changes and reflecting the current cost estimates, including risk and contingency, schedule, and scope details as part of the annual budget process. (4) PSEG Long Island must consult with LIPA staff prior to reallocating budgeted funds, and PSEG Long Island must submit to LIPA a Capital Budget Reallocation Explanation form. (5) If a funded Capital Project included in the LIPA Consolidated

Management Audit Recommendation Number Summary	LIPA Oversight Comments on Progress Implementing Management Audit Recommendation Objectives
	Capital Budget is postponed, PSEG Long Island must identify the change in the project schedule and propose to carryover the approved Capital Budget funds from the current adopted Capital Budget to the proposed Capital Budget as part of the next year's Capital Budget adoption process. These recommendations have been incorporated into the proposed reformed contract with PSEG Long Island, which will be considered by the Board in December 2021. A joint PSEG Long Island and LIPA capital working group will assess any future enhancements to the PJDs, including providing additional financial information including but limited to an Operating Budget impact statement, and a review of affected stakeholders and community outreach plan. Finally, PSEG Long Island will work to address LIPA's PJD requests for 2022. Changes that cannot be accommodated for 2022 will be identified and addressed for the 2023 budget process.
Recommendation No. 17 Improve the Emergency Response Training in the ERP to identify type of training and frequency by position.	Following Tropical Storm Isaias, the LIPA Board adopted a series of recommendations to address Emergency Response Plan (ERP) deficiencies found by the Isaias Task Force. Chief among the recommendations was a re-organization of emergency planning, training, staffing and assignment of roles under a single Emergency Planning Team within PSEG Long Island. LIPA also recommended the hiring of a Director of Emergency Management and development of more rigorous ERP training and exercises to: (a) test decision making, decision paths, and how information passes between functions, and (b) exercise well-developed business continuity plans, and use of training simulations and exercises that challenge and better prepare the response team with realistic scenarios. PSEG Long Island has included in the ERP an "Exercise and Training Schedule" and hired an outside consultant to re-organize the Hurricane Tabletop Exercise for 2021. LIPA staff continues to work with PSEG Long Island to address specific improvement opportunities in ERP staffing, and to improve the quality and credentials of consultants used during drills and exercises. Therefore, the implementation plan for this recommendation remains In Progress. The reformed contract with PSEG Long Island, which will be considered by the Board in December 2021, provides LIPA with the ability to review and approve training exercises and requires the hiring of a Director of Emergency Management.
Recommendation No. 18 Complete development of the CMMS and asset management recommendations from 2013	Asset management is a key responsibility in any utility. Both the 2013 and 2018 management audits found significant deficiencies in how the previous and current service providers managed LIPA's assets. Auditors concluded in 2018 that implementation of the Centralized Maintenance

Management Audit Recommendation Number Summary	LIPA Oversight Comments on Progress Implementing Management Audit Recommendation Objectives
Operations & Management Audit	Management System (CMMS), first noted in 2013, had still not been completed. In 2019, LIPA engaged an internationally recognized asset management consulting firm that worked with PSEG Long Island to independently review processes and recommend improvements. These included better evaluation of substation asset life cycles, and the development of plans and procedures for repair or replacement of key components according to well-defined timetables. Despite progress, CMMS remains incomplete. PSEG Long Island's asset management and maintenance functions are fragmented and do not provide an enterprise-wide understanding of system assets. The LIPA Board adopted recommendations and PIPs related to asset management which will bring needed upgrades to PSEG Long Island's asset management program, including reporting to LIPA on reliability assessments of plant asset performance; completion of asset management plans for transmission, distribution, and substation infrastructure, completion of the CMMS upgrade as set forth in 2013 and 2018 and expansion of the CMMS upgrade to include an Enterprise Asset Management System (EAMS) to capture and evaluate the health of system assets prior to breakdowns; and, development of a Strategic Asset Management Plan that binds work activities, investment commitments, and decision making in an enterprise-wide framework. These improvement plans are expected to be finalized by PSEG Long Island and delivered to LIPA by the end of 2021. Implementation is expected to last through 2025. LIPA has proposed three performance metrics for 2022 related to advancing asset management that are consistent with the Board recommendations.
Recommendation No. 24: Utilize a WBS in the initial phases of the project justification and conceptual estimating and continue their refinement as the project progresses.	PSEG Long Island still does not have a process to utilize a Work Breakdown Structure (WBS) for capital non-project work and therefore has not demonstrated to LIPA how it will achieve the goal of this and several related recommendations aimed at producing accurate cost estimation as part of project justification. Project estimating, and capital budget development continue to suffer from inaccuracies. LIPA has proposed a performance metric, with deliverables due mid-2022. The metric will require PSEG Long Island to produce a process that integrates WBS and trains PSEG Long Island staff on use of such procedures. Therefore, LIPA deems this recommendation to be In Progress.
Recommendation No. 25: Formalize and incorporate contingency management in capital project cost estimating and	PSEG Long Island uses a percentage of cost-based approach to estimate Risks and Contingencies (R&C) on capital projects. In July 2021, an independent consultant retained by LIPA found that the overall 20 percent R&C amount used throughout project construction stages appeared to be two to four times higher than R&C adjustments used by other utilities.

Management Audit Recommendation Number Summary	LIPA Oversight Comments on Progress Implementing Management Audit Recommendation Objectives
cost management; report the expenditure of contingency funds separately from project estimates rather than inflate total project budget amounts.	PSEG Long Island also underutilized existing estimating tools and does not use a formalized portfolio management system for tracking and storing information on capital projects as they progress. The LIPA Board adopted capital budget recommendations and a PIP seeking to correct certain of these deficiencies. In addition to completing PJDs before a capital project may be considered by the LIPA Board for inclusion in the consolidated budget, PSEG Long Island will also provide LIPA with periodic PJD updates highlighting, current cost estimates, including risk and contingency, schedule, and scope details as part of the annual budget process. Carryover projects must be identified by PSEG LI as part of the following year's capital budget adoption process. These changes have been included in the reformed contract that will be considered by the Board in December 2021. Several metrics related to PJDs, cost estimating, and construction have also been included in proposed 2022 performance metrics. The Board-adopted PIP further establishes a Capital Budget Working Group to develop a policy to govern the inclusion of Risk and Contingency in a project's cost estimate.
Recommendation No. 26: Define and report project management performance measures that focus on the effectiveness of cost estimation, earned value and schedule management. Project progress reports should be timely and contain all information which is pertinent for their target audience. Cost estimates and schedules developed for preliminary plans should be evaluated when a project is complete to determine where further enhancements to project estimating can be made.	For PSEG Long Island to complete the objectives of Recommendation No. 26, it will be necessary for it to address the issues identified in related recommendations, as outlined in comments regarding Recommendations 13, 25, 27 and 28. Implementation of the LIPA Capital Budget recommendations outlined above in Recommendation No. 25 will be necessary to meaningfully achieve the reporting objectives of this recommendation. Therefore, implementation of this recommendation remains in progress for the same reasons described above and below in Recommendation No. 28.
Recommendation No. 27: Develop an integrated work management system covering all PSEG Long Island operations, maintenance and construction resources based on engineered time standards and cover routine operations, repetitive maintenance activities, planned work, support	Implementation of Recommendation No. 27 is in progress. LIPA staff recommended and the LIPA Board of Trustees has adopted a series of specific initiatives to produce benefits for LIPA customers in the areas of productivity, efficient deployment of capital, improved customer satisfaction and better execution of high priority work, among others. At present, the Work Management PIP remains in development. Initiatives will include:

Management Audit Recommendation Number Summary	LIPA Oversight Comments on Progress Implementing Management Audit Recommendation Objectives
requirements. Provide continuous feedback on effectiveness.	1) Creating business processes and work practices so that all asset-related work is orchestrated, managed, executed, and controlled using the EAMS system referenced at Recommendation No. 18 above. 2) Improve the accuracy of estimating via a consistent process and use of reusable planning artifacts with standard times (i.e., Compatible Unit Estimates (CUE) and task lists) for all work types. 3) Improve the use of mobile devices and ergonomic transaction design to enhance field management of work and data to be integrated into the new EAMS system. 4) Improve high-level scheduling and yard-level short-term work-week scheduling and dispatch. 5) Improve Key Performance Indicators/metric definitions and status reporting dashboards for work management visibility and performance improvement. 6) Clarify, rationalize, and implement standardized work management processes and PSEG Long Island work management positions (e.g., planner, scheduler, work coordinator, router) and across yards. 7) Develop key principles for work prioritization. 8) Develop key principles for work prioritization and scheduling and rescheduling, including a clear process decision rights for developing an annual schedule as well as adjusting the schedule. LIPA has proposed several performance metrics for 2022 that address each of the Work Management recommendations.
Recommendation No. 28: Fill gaps in the current management information reporting and organizational reporting relationships to support an integrated work management system.	In order to fill the information reporting and organizational gaps referenced in this audit recommendation, PSEG Long Island must implement work management processes outlined above in comments to Recommendation No. 27. Pending completion of all deliverables in the Work Management PIP, as well as verification by LIPA, implementation of Recommendation No. 28 remains In Progress.
Recommendation No. 29 Develop OT targets for PSEGLI operations and maintenance organizations based on economic and verified industry norms.	The 2018 Management Audit recommended that PSEG Long Island develop workforce overtime targets to "yield optimal cost benefit from the overtime hours worked." PSEG Long Island has since developed specific OT targets (excluding storm OT) to manage T&D personnel hours in the areas of:

Management Audit Recommendation Number Summary	LIPA Oversight Comments on Progress Implementing Management Audit Recommendation Objectives
	• Overhead and underground line repair and maintenance. • Electric distribution operations. • Substation and relay maintenance. LIPA continues to review target improvements and processes developed by PSEG Long Island. Efforts to reduce OT include a performance metric proposed for 2022. Pending LIPA's IV&V, implementation of Recommendation No. 29 remains In Progress.
Recommendation No. 36 Measure the effectiveness of capital-project outreach, media relations and external affairs programs, to determine whether outreach efforts are cost-efficient, on target and achieving results. Potential measurement options include surveys, focus groups, a media clip index, or attendance at public meetings.	PSEG LI issued surveys and reported this recommendation as complete. However, as of July 27, 2021, PSEG Long Island External Affairs relayed that no outreach survey responses have been completed by customers to date. Since no survey responses have been logged, there remain no findings to evaluate, and no ability to evaluate the effectiveness of the proposed survey to finalize the outreach survey period. Therefore, the implementation status for Recommendation 36 is In Progress pending marketing of the survey to customers to obtain responses and evaluation of responses. LIPA has proposed a performance metric for 2022 to address this recommendation.

Conclusion

LIPA and PSEG Long Island continue to work to make necessary changes to operational and management processes that will bring a level of service and reliability that LIPA's customers deserve. LIPA will continue to collaborate with DPS staff to evaluate each implementation plan, incorporate lessons-learned from ongoing enhancement efforts, and to respond with further improvements as necessary.

Recommendation Number: 1 **Item Status** Completed

Recommendation:

LIPA and PSEG Long Island should work with the DPS to determine which of the outstanding recommendations from the 2013 are still relevant and should be implemented.

Assigned LIPA Staff: James Miskiewicz, Deputy General Counsel

Assigned PSEG Staff Andrea Elder-Howell - Executive Sponsor; Michael Ennis - Team Leader

LIPA Executive: Anna Chacko, General Counsel

Objectives and Assumptions of the Recommendation:

The Management Audit Report found that 17 of the 83 recommendations made during the 2013 audit remained in progress. The current recommendation from the 2018 report recognized that not all of the outstanding recommendations remain relevant given intervening developments such as the LIPA Reform Act and changes to the operating models and responsibilities of LIPA and PSEG Long Island. Accordingly, the purpose of this recommendation is to document completion of all recommendations remaining from the 2013 management audit wherever still relevant in view of DPS, the Authority and PSEG Long Island. By working with DPS staff, LIPA and PSEG Long Island will evaluate and jointly come to agreement which 2013 recommendations remain in need of further progress to be reported upon separately and/or which action plans are better addressed through new 2018 recommendations.

Deliverable: **Ranking:** Moderate

The initial implementation plan to be filed with the LIPA Board of Trustees and DPS on October 24, 2018 will specify which 2013 recommendations are deemed still relevant, include timetables for completion, and/or identify those which will be shifted for incorporation into action plans to implement 2018 recommendations

Deliverables/Milestones	Due Date	Status	Comments
LIPA and PSEG Long Island meet with DPS staff and present proposal on how to address outstanding 2013 recommendations within the context of 2018 implementation plans	8/15/2018	Completed	DPS staff have agreed that all remaining 2013 a recommendations were either completed, or wou implemented through new 2018 recommendatio forth above at pages xiii through xvi: "Summary Findings with Reference to 2018 Implementatio (Table).
PSEG Long Island and LIPA senior leadership meet to review, revised action plans for all remaining 2013 recommendations	9/17/2018	Completed	
Revised draft implementation plans submitted to DPS staff for review and comment	10/1/2018	Completed	
LIPA and PSEG Long Island senior leadership meet to discuss revisions to plans	10/11/2018	Completed	
DPS to make final comments on previously-submitted proposals to incorporate 2013 recommendations into 2018 implementation plans. Any 2013 matters deemed more appropriately addressed separately will be broken out, reported and tracked separately.	10/12/2018	Completed	
Action plan for all 2018 and outstanding 2013 recommendations publicly filed with LIPA Board and DPS	10/24/2018	Completed	

Cost Benefit Analysis:

LIPA and PSEG Long Island estimate that costs to determine current relevance of previous audit recommendations will be nominal whereas the benefit will be to better focus on and clarify implementation of current recommendations.

Feedback: N/A

Recommendation Number: 2 **Item Status** Recurring reports

Recommendation:

LIPA and PSEG Long Island should develop an implementation plan for all audit recommendations (new recommendations and outstanding recommendations that LIPA, PSEG Long Island and DPS determine remain relevant) within 90 days of the Final Audit Report acceptance and submit the implementation plan to the LIPA Board of Trustees and the DPS. The Report could take the form required of the IOUs.

Assigned LIPA Staff: James Miskiewicz, Deputy General Counsel

Assigned PSEG Staff Andrea Elder-Howell - Executive Sponsor; Michael Ennis - Team Leader

LIPA Executive: Anna Chacko, General Counsel

Objectives and Assumptions of the Recommendation:

The objective is to develop and maintain a system to contemporaneously document development of implementation plans for each recommendation in the management audit and to track progress in implementing each recommendation in the 2018 audit as well as those deemed active from the 2013 audit. The system assigns team leaders for each recommendation, assesses scope, objectives and cost-benefit analyses, projected timetables and milestones for achievement of completion and serves as a measure of overall progress. The system will form the basis of periodic progress reporting to the LIPA Board of Trustees and DPS, and ultimately serve as a record for implementation for future management audits as required by the Public Authorities Law.

Deliverable: **Ranking:** Moderate

File implementation plan with the LIPA Board of Trustees and DPS on October 24, 2018. File implementation plan progress reports pursuant to the Board's Audit Relationships Policy as implementation action plans require.

Deliverables/Milestones	Due Date	Status	Comments
LIPA & PSEG Long Island meet and agree on implementation plan format	7/16/2018	Completed	
Brief LIPA Board and submit resolution to implement audit recommendations	7/25/2018	Completed	
Implementation plan & tracking schedule finalized	7/30/2018	Completed	
All draft LIPA & PSEG Long Island implementation plans due on LIPA SharePoint platform today	9/7/2018	Completed	
PSEG Long Island and LIPA senior leadership meet to discuss approval and/or revisions to draft implementation plans	9/17/2018	Completed	
Revised implementation plans due on SharePoint tracker	10/1/2018	Completed	
LIPA & PSEG Long Island senior leadership approve implementation plans for each 2013 and 2018 recommendation	10/11/2018	Completed	
Comments on draft implementation plans received from DPS staff	10/12/2018	Completed	
Implementation Plan "book" compiled, disseminated to Board of Trustees and DPS	10/12/2018	Completed	
Management Audit Implementation Plan publicly presented to Board and DPS; posted on websites	10/24/2018	Completed	
Progress reports submitted to LIPA Board of Trustees, posted on LIPA website and filed with DPS	9/30/2019	Completed	See also Recommendation No. 3

Progress reports submitted to LIPA Board of Trustees, posted on LIPA website and filed with DPS	9/30/2020	Completed	
Progress reports submitted to LIPA Board of Trustees, posted on LIPA website and filed with DPS	9/30/2021	Recurring reports	
Progress reports submitted to LIPA Board of Trustees, posted on LIPA website and filed with DPS	9/30/2022	Recurring reports	
Progress reports submitted to LIPA Board of Trustees, posted on LIPA website and filed with DPS	9/30/2023	Recurring reports	

Cost Benefit Analysis:

The cost to develop an implementation plan is nominal. The development of a plan will ensure the audit recommendations will be implemented in a timely manner. Documentation and tracking of progress, in conjunction with regularly reporting to the Board, DPS and the public serves the Authority and PSEG Long Island's values of transparency to stakeholders. The system will also aid in producing records of implementation more efficiently for the next management audit.

Feedback: N/A

Recommendation Number: 3 **Item Status** Recurring reports

Recommendation:

LIPA Internal Audit should perform a comprehensive audit of the implementation status of all audit recommendations annually until the next DPS audit is performed. The results of LIPA's audit should be submitted to LIPA executive management, the LIPA Board of Trustees, PSEG Long Island, and the DPS. Within each LIPA audit:

- an evaluation of progress performance should be included.
- a progress tracking document should show activities completed to date and those in process.
- any revisions to completion targets should be highlighted for management review.

Assigned LIPA Staff: Kathleen Mitterway, Senior Advisor for Audit

Assigned PSEG Staff Rocky Shankar, Internal Audit Manager

LIPA Executive: Bobbi OConnor, Chief Administrative Officer & Board Secretary

Objectives and Assumptions of the Recommendation:

The objective of this recommendation is to ensure that the 2013 & 2018 NorthStar Recommendations and Management Action Plans have been effectively implemented.

Consistent with the LIPA Board of Trustee's Policy on Audit Relationships, LIPA Internal Audit will perform a comprehensive audit of the implementation status of all audit recommendations annually until the next DPS audit is performed. The results of this analysis will be submitted to LIPA executive management, the LIPA Board of Trustees, PSEG Long Island, and the DPS.

Within each LIPA audit: an evaluation of progress performance will be included; a progress tracking document will show activities completed to date and those in process; any revisions to completion targets will be highlighted for management review.

The Authority's Chief Executive Officer, together with PSEG Long Island, will submit an annual report to the Oversight Committee of the Board and the Department of Public Service of the status of the implementation plan and the results of the annual audits.

That annual report will include a summary of the activities completed to date and any revisions to completion targets. The annual report will be reviewed by Internal Audit for completeness prior to submission. The Oversight Committee will report significant matters to the Board.

Internal Audit will review the effectiveness of the implementation plan in addressing each audit recommendation after the completion of the plan for that recommendation.

Deliverable: **Ranking:** High

Annual Report to the Oversight Committee of the Board and the Department of Public Service of the status of the implementation plans and the results of the annual audits. After each annual audit, LIPA Internal Audit will review any audit observations relative

to the implementation plans for consistency between the plans and the Management Audit findings and recommendations.

Deliverables/Milestones	Due Date	Status	Comments
Authority's CEO, together with PSEG Long Island, will submit an annual report to the Oversight Committee of the Board and the DPS of the status of the implementation plan and the results of the annual audits	9/30/2019	Completed	
Authority's CEO, together with PSEG Long Island, will submit an annual report to the Oversight Committee of the Board and the DPS of the status of the implementation plan and the results of the annual audits	9/30/2020	Completed	
Authority's CEO, together with PSEG Long Island, will submit an annual report to the Oversight Committee of the Board and the DPS of the status of the implementation plan and the results of the annual audits	9/30/2021	Completed	
Authority's CEO, together with PSEG Long Island, will submit an annual report to the Oversight Committee of the Board and the DPS of the status of the implementation plan and the results of the annual audits	9/30/2022	Recurring reports	
Authority's CEO, together with PSEG Long Island, will submit an annual report to the Oversight Committee of the Board and the DPS of the status of the implementation plan and the results of the annual audits	9/30/2023	Recurring reports	

Cost Benefit Analysis:

There are no direct cost or benefits associated with the audit of the implementation of recommendations. Each recommendation has specific benefits as specified in the individual CBAs.

Feedback: N/A

Recommendation Number: 4 **Item Status** Completed

Recommendation:

LIPA Financial Oversight should formally document the results of its activities and annual assessment with presentation to PSEG Long Island and LIPA executives and Department of Public Service (DPS)

Assigned LIPA Staff: Donna Mongiardo, Vice President - Controller

Assigned PSEG Staff 0 - None

LIPA Executive: Ken Kane, Senior Advisor to Operations Oversight

Objectives and Assumptions of the Recommendation:

The objective of this task is to improve the documentation of work performed by LIPA Financial Oversight staff. This documentation will also improve the lines of communication and understanding of outcomes between LIPA and PSEG Long Island.

Deliverable: **Ranking:** Moderate

Annual report summarizing LIPA Financial Oversight work performed and outcome or agreement with PSEG Long Island of such projects.

Deliverables/Milestones	Due Date	Status	Comments
Form a LIPA oversight SharePoint documentation team	9/30/2018	Completed	
Coordinate annual oversight report format including details such as work product and timeline, with team	12/31/2018	Completed	Completed on the revised due date of 4/30/2019
Provide year end summary of 2018 annual report to DPS, LIPA and PSEG Long Island management teams	12/31/2019	Completed	
Distribute draft report for 2018 to Senior Management at LIPA and PSEG Long Island and DPS for review	12/31/2019	Completed	
Issue subsequent years report to DPS, LIPA and PSEG Long Island management teams	4/30/2021	Completed	

Cost Benefit Analysis:

Additional time of LIPA staff will be required as a more coordinated effort of documentation will be necessary. In addition, consistent formatting and development of a template will require additional modifications to SharePoint.

The benefit of this implementation plan is improved transparency and communication.

Feedback: N/A.

Recommendation Number: 5 **Item Status** Recurring reports

Recommendation:

LIPA should formally request appointments or confirm extensions to Board member term periods at least six months prior to term expirations.

Assigned LIPA Staff: Jason Horowitz, Assistant General Counsel and Assistant Secretary to the Board

Assigned PSEG Staff 0 - None

LIPA Executive: Bobbi OConnor, Chief Administrative Officer & Board Secretary

Objectives and Assumptions of the Recommendation:

The LIPA Board of Trustees has nine members. Five are appointed by the Governor, two by the Speaker of the Assembly, and two by the Senate Majority Leader. The objective of this recommendation is to reduce the potential for vacancies or expired terms on the LIPA Board of Trustees by sending the appointing authorities notice of an expiring Trustee term at least six months prior to the expiration. The appointing authorities also track Trustee terms.

Deliverable: **Ranking:** Low

Deliverables/Milestones	Due Date	Status	Comments
Prepare schedule of trustee term expiration dates	6/29/2018	Completed	
Trustees review the competencies and expectations to be sent to the appointing authorities by the Board Chair, per the Board's Policy on Governance and Agenda Planning	10/24/2018	Completed	
Board Chair sends letter to appropriate appointing authority for Trustee terms expiring 12/31/2019	6/30/2019	Completed	Documentation sent 6/14/2019.
Board Chair sends letter to appropriate appointing authority for Trustee terms expiring 12/31/2020	6/30/2020	Completed	
Board Chair sends letter to appropriate appointing authority for Trustee terms expiring 12/31/2021	6/30/2021	Completed	
Board Chair sends letter to appropriate appointing authority for Trustee terms expiring 12/31/2022	6/30/2022	Recurring reports	

Cost Benefit Analysis:

The costs to implement this recommendation are nominal and consistent with prior practice.

Feedback: N/A.

Recommendation Number: 6 **Item Status** In Progress

Recommendation:

LIPA and PSEG Long Island should continue to develop an effective, comprehensive ERM process.

Assigned LIPA Staff: Corey Horowitz, Director of Risk Management

Assigned PSEG Staff Laurent Pommier - Executive Sponsor; Ted Repetti - Team Leader

LIPA Executive: Bobbi OConnor, Chief Administrative Officer & Board Secretary

Objectives and Assumptions of the Recommendation:

The ERM Team prepared an action plan road map to implement this recommendation. Since the recommendation is broad and subject to interpretation of what an "effective" and "comprehensive" ERM process is, the ERM Team based its plan on the Committee Of Sponsoring Organizations ("COSO") framework and included an annual maturity assessment from an external consulting firm (e.g. Corporate Executive Board or "CEB"). The assessment will provide a measure of progress and identify areas of opportunity for further enhancement of our ERM program based on best-in-practice recognized industry standards. The action plan should reduce any subjectivity during future DPS Management Audits on the progress achieved.

Deliverable: **Ranking:** Moderate

PSEG Long Island will complete Project Improvement Plans (PIPs) that will: Include LIPA SMEs in risk discussions, designation of management level risk owners, establish a joint ERM SharePoint, development and presentation of an annual report. PIPs also include: development of a schedule and presentation of deep dive analysis; development of a risk correlation matrix for a designated risk; development and facilitation of ERM risk training; and a defined process for escalating risks as events occur.

Deliverables/Milestones	Due Date	Status	Comments
Perform a periodic ERM Maturity Assessment Review - Initial	7/31/2018	Completed	
Review, and if necessary, propose revisions to the LIPA ERM Board Policy Statement	9/27/2018	Completed	
Identify a risk liaison per line of business to help increase risk awareness (identify Risk Liaisons for LIPA Departments and PSEG Long Island lines of business - Customer Operations, Electric Operations, Power Markets, and Business Services)	12/31/2018	Completed	LIPA and PSEG Long Island VP/Executives ass individual from their department/line of busine the ERM team in coordinating and facilitating E discussion meetings. Each risk liaison assists ir meeting dates and attends ERM department mee
Establish process to integrate ERM information/findings into the LIPA Strategic Planning process.	2/15/2019	Completed	The integration of ERM information into LIPA's Planning Process was completed.
Review of the LIPA/PSEG Long Island joint ERM Procedures Manual (internal document)	6/30/2019	Completed	
Develop prioritized portfolio view of all enterprise/corporate risks	6/30/2019	Completed	
Review risk profile with each department V.P. for consensus	6/30/2019	Completed	
Establish a framework and identify emerging risks	6/30/2019	Completed	

Develop risk reporting framework for department, organization, and Board reporting (frequency and depth)	6/30/2019	Completed	
Perform second annual ERM Maturity Assessment - Review	7/31/2019	Completed	Completed Gartner/CEB ERM Maturity Assess
Introduce velocity as an additional component in assessing risk	12/31/2019	Completed	
Perform deep-dive analysis on key enterprise/corporate risks	6/20/2020	Completed	
Document response strategy and current mitigation actions for top enterprise/corporate risks	6/30/2020	Completed	
Perform third annual periodic ERM Maturity Assessment Review	7/31/2020	Completed	ERM Team from LIPA and PSEG Long Island c the 3rd ERM Maturity Assessment via Gartner c 2020.
Establish a framework to monitor and measure the effectiveness of risk mitigation/reduction efforts	12/31/2020	Completed	
Perform fourth annual periodic ERM Maturity Assessment Review	7/31/2021	Completed	Pursuant to Board Resolution #1572, amended I 16, 2020, LIPA will conduct a biennial review o maturity of the Program compared to industry b practices, which will be provided to the Board o senior management, and LIPA's Internal Audit s next scheduled biennial review will be due 7/31 Audit Step Delivery Date Change Form Submitt Approved.
Integrate updated and revised risk data into the business planning cycle to help prioritize O&M, capital and resource allocations	7/31/2022	In Progress	On-going process.
Perform fifth annual periodic ERM Maturity Assessment Review	7/31/2022	Not Started	

Cost Benefit Analysis:

It is difficult to quantify the benefits of ERM. While ERM may contribute to avoided costs by mitigating risks, these are not easily quantified.

Feedback: In 2013, management auditors recommended the creation of an Enterprise Risk Management (ERM) program that assessed risks posed to the entire utility, development of mitigation strategies, and application of those strategies in an enterprise-wide manner. The 2018 Management Audit Report found significant progress in this area and recommended that LIPA and PSEG Long Island continue to collaborate in the development of a mature ERM program.

The Isaias Task Force found that PSEG Long Island did not share critical information regarding certain identified risks to LIPA senior leadership or the LIPA-PSEG Long Island ERM program. Most notable was PSEG Long Island's management failure to alert LIPA of identified issues arising from the utility's long-delayed upgrade of its Outage Management System ("OMS"). See Tropical Storm Isaias 90-Day Report (November 18, 2020). The OMS collapsed during Isaias thereby delaying restoration efforts.

Going forward, additional enhancements are planned and will include the development of regular "deep dive" analysis and reporting on risk and risk mitigation, development of a risk correlation matrix for a designated risk, development, and facilitation of ERM risk training, and a procedure to escalate to senior leadership at LIPA and PSEG Long Island major risks as they are identified. LIPA has also proposed metrics for 2022 to incentivize further improvements to PSEG Long Island's ERM program.

Recommendation Number: 7 **Item Status** In Progress

Recommendation:

Continue to develop and implement the SOS capital program optimization model.
•Implement improvements identified by PSEG LI and LIPA Internal Audit, including:
-Review and adjust the project description questions.
•Add a demographic category for "permitting required", which can act as a flag of sorts when running optimization scenarios.
•Flag projects that are necessary to remediate a violation or to prevent a violation.
-Review the scoring criteria for each business area when setting up a new project in SOS.
-Identify any biases toward certain types of projects.
-Refine the Strategic Objectives and the Success Criteria. Consider including Success Criteria not used for the 2018 budget, such as NPV and the financial risk of deferral.
•Expand the use of SOS to other business areas, including IT and Customer Operations. Include a step in the SOS optimization process to calibrate value and risk scoring across business units that develop capital projects such as Network Strategy Planning group, Electric Operations, and Reliability Management. IDA should lead a process to review the scoring of projects with similar risk values to ensure the projects are scored on a comparable basis. Similarly, IDA should ensure the different organizations use comparable bases for value scoring the projects using the Strategic Objectives and the Success Criteria.

Assigned LIPA Staff: Michael Simione, Director of Transmission and Distribution System Oversight

Assigned PSEG Staff Michael Sullivan - Executive Sponsor; Joe Cicalo - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

The objective is to improve the value of selected investments through improved use of the Spend Optimization Suite (SOS) system, which is a software application provided through an outside consultant. The recommendation aims to implement the recommendations from the 2017 LIPA audit of the SOS process, as well as further improvements in the SOS system and process. This implementation plan also addresses Recommendation 9.4.2 of the 2013 audit.

Deliverable: **Ranking:** Moderate

Review and implement, as described below, the following enhancements of the SOS system/process:

- Review and adjust the project description questions.
- Add a demographic category for "permitting required, "which can act as a flag of sorts when running optimization scenarios.
- Flag projects that are necessary to re-mediate a violation or to prevent a violation.
- Review the scoring criteria for each business area when setting up a new

project in SOS.
- Identify any biases toward certain types of projects.
- Refine the Strategic Objectives and the Success Criteria. Consider including Success Criteria not used for the 2018 budget, such as NPV and the financial risk of deferral.
- Expand the use of SOS to other business areas, including IT and Customer Operations.
- Include a step in the SOS optimization process to calibrate value and risk scoring across business units that develop capital projects such as Network Strategy Planning group, Electric Operations, and Reliability Management. Investment Delivery Assurance (IDA) should lead a process to review the scoring of projects with similar risk values to ensure the projects are scored on a comparable basis. Similarly, IDA should ensure the different organizations use comparable bases for value scoring the projects using the Strategic Objectives and the Success Criteria.
- Analyze the potential to expand the use of SOS to other business areas, including Power Markets and Utility 2.0. Provide recommendation.

Deliverables/Milestones	Due Date	Status	Comments
Review and adjust the project description questions; category for "permitting required"; flag projects necessary to re-mediate or prevent violation	6/30/2018	Completed	
Identify any biases toward certain types of projects	7/31/2018	Completed	
Review the scoring criteria for each business area when setting up a new project in SOS	7/31/2018	Completed	
Refine the Strategic Objectives and the Success Criteria. Consider including Success Criteria not used for the 2018 budget, such as NPV and the financial risk of deferral	8/31/2018	Completed	
Include a step in the SOS optimization process to calibrate value and risk scoring across business units that develop capital projects such as Network Strategy Planning group, Electric Operations, and Reliability Management	5/31/2019	Completed	
Expand the use of SOS to other business areas, including IT and Customer Operations	6/30/2019	In Progress	See comments below under Feedback.
Analyze the potential to expand the use of SOS to other business areas, including Power Markets and Utility 2.0	7/1/2019	Completed	

Cost Benefit Analysis:

Internal resources and the UMS group (SOS vendor) consultants were utilized in order to satisfy the implementation of the recommendation. PSEG Long Island has a software support services agreement with UMS group. There is an annual fee of $35,000 for this service agreement. Projected costs were significantly reduced for the Spend Optimization Suite (SOS) enhancements by using PSEG Long Island Investment Delivery Assurance (IDA) resources and UMS consultants to utilize the hours for the software support services agreement.

There are many qualitative benefits by extending the use of SOS to the other business areas. It will provide consistency and transparence in the project selection process across all business areas. Also, it will allow the entire organization to make smarter project selection decisions, primarily through rationalization and alignment of spend to strategic and operational value and management of risk.

Risk Analysis:
There will a learning curve from the other business areas before SOS can be in full operation. At least one budget cycle might be necessary for a full implementation and final adjustment.

Customer Benefit Analysis:
Successful completion of this item will improve the quality of the capital budget process. This will improve the quality by optimizing the use of funds which will translate into less of a bill impact as funds are more effectively deployed. Therefore, it will provide more transparency for the customers and all the stakeholders.

Feedback: In 2017, PSEG Long Island began using a third-party vendor product known as the Spend Optimization Suite (SOS) to support capital prioritization decision processes. NorthStar auditors noted that while PSEG Long Island's use of SOS in selecting projects for the 2018 capital budget was "a good start," SOS had only been implemented on a "pilot" basis and procedures remained under development. While several implementation steps have been completed, LIPA has not been provided evidence that an operational SOS program is currently being used in areas beyond what was noted in the 2018 Management Audit. Accordingly, LIPA deems the implementation of this recommendation to remain In Progress pending LIPA's Independent Verification and Validation (IV&V) that the optimization tool is in fact operational in IT and Customer Operations, and pending completion of LIPA Internal Audit testing.Finally, LIPA staff continues to review the current use of the SOS tool and LIPA is currently evaluating other tools used by other utilities that can provide enterprise-wide prioritization and optimization.

Recommendation Number: 8 **Item Status** Completed

Recommendation:

Provide LIPA-specific capital budget versus actual expenditure variance data to the Board of Trustees in each Finance and Audit Committee package.

Assigned LIPA Staff: Donna Mongiardo, Vice President - Controller

Assigned PSEG Staff 0 - None

LIPA Executive: Ken Kane, Senior Advisor to Operations Oversight

Objectives and Assumptions of the Recommendation:

Provide Finance and Audit Committee of the Board of Trustees with LIPA-specific capital spending during the year.

Deliverable: **Ranking:** Low

Capital spending for LIPA included in the monthly Finance and Audit Committee presentation.

Deliverables/Milestones	Due Date	Status	Comments
Include LIPA capital spending versus actual in Finance and Audit Committee book	9/24/2018	Completed	

Cost Benefit Analysis:

There is no additional cost of this addition to the Finance and Audit Committee book. The benefit is improved transparency related to LIPA capital spending and the status of proposed projects.

Feedback: N/A

Recommendation Number: 9 **Item Status** In Progress

Recommendation:

Update the PSEG Long Island budget procedure to include the determination of incremental operations and maintenance (O&M) expenses associated with new construction.

Assigned LIPA Staff: Gerard E. Ring, Director of Budget and Financial Oversight

Assigned PSEG Staff Margaret Keane - Executive; Prem Patel - Team Leader

LIPA Executive: Donna Mongiardo, Vice President - Controller

Objectives and Assumptions of the Recommendation:

Identify the O&M associated with planned capital projects to ensure that new requirements will be included in the annual budget.

Deliverable: **Ranking:** Moderate

Each year, PSEG Long Island budget staff will work with each business area to obtain a list of Capital Projects. The PSEG Long Island budget and operating staff will review the list of projects and identify projects with a potential O&M impact and complete a Capital Project O&M Assessment Analysis. This analysis will be shared with LIPA. These projects will likely be large projects that either result in the implementation of new technology or system expansion. The Capital Project O&M Assessment Analysis will be factored into the current year budget development and multi-year O&M and capital financial plan projections.

PSEG Long Island will revise its current Budget Policy and Procedures to include the evaluation of capital projects and development of the Capital Project O&MAssessment Analysis as part of the development process. The analysis of the capital program and capital projects in terms of their impact to O&M funding will be incorporated into future budgets.

Deliverables/Milestones	Due Date	Status	Comments
Revise current Budget Policy and Procedures to include evaluation of capital projects and development of a Capital Project O&M Assessment Analysis as part of the budget development process	12/31/2018	Completed	

Cost Benefit Analysis:

This recommendation will require nominal incremental costs. Determining projected O&M costs associated with capital projects and including them in the O&M budget has minimal impact on the project estimating process and compilation of O&M budget data.

Reduction in costs is not expected. However, the inclusion of incremental operations and maintenance costs of new capital budgets will improve the accuracy of the O&M budget projects and reduce the risk that needed O&M might have to be forgone due to the realization of unexpected costs related to new capital projects.

The risk of excluding incremental operations and maintenance costs associated with capital projects may cause that portion of the annual budget to be understated. If spending starts to exceed the budget, management may have to defer other vital work.

The customer benefit will be that the operations and maintenance budget will be planned with more accuracy aiding in stronger budget management. This upfront planning may negate a potential negative impact to work plans.

Feedback: PSEG Long Island's current capital budget procedure still does not adequately address and quantify incremental operations and maintenance (O&M) costs associated with capital projects. NorthStar noted in 2018 that such a process is needed to enable PSEG Long Island to better determine if annual operating budgets could support all necessary expenditures of completed capital projects.

PSEG Long Island does evaluate O&M impacts as capital projects near their in-service date. However, consistent with the Management Audit Report, LIPA had recommended that PSEG Long Island develop and implement a capital project impact analysis process that will include an assessment of discernable O&M impacts at the design phase, address qualitative impacts, such as customer benefits and enhanced system reliability for applicable capital projects. The analysis should include a framework for conducting a quantitative analysis and documenting qualitative benefits. The implementation of this recommendation, therefore, remains In Progress.

Pursuant to LIPA Board-adopted recommendations, capital projects subject to the enhanced analysis are major projects proposed for approval in the 2023 budget cycle, herein defined as projects either (i) having a total project cost of $25.0 million or greater or (ii) projects that would reasonably be expected to have an operating budget impact when implemented of $1.0 million or greater (cost or savings) on an annual basis when fully implemented. LIPA has also proposed a 2022 metric for further development of this process.

Recommendation Number: 10 **Item Status** Completed

Recommendation:

Complete the process of upgrading LIPA's financial system.

Assigned LIPA Staff: Mujib Lodhi, Chief Information Officer and Senior VP of Customer Experience, Donna Mongiardo, Vice President - Controller

Assigned PSEG Staff 0 - None

LIPA Executive: Tamela Monroe, Chief Financial Officer

Objectives and Assumptions of the Recommendation:

A new Enterprise Resource Planning (ERP) system will improve the functionality of financial reporting and include modules not currently available in LIPA's existing ERP system such as treasury and procurement. The new system will allow for automatic integration of systems currently manually maintained eliminating potential for human error and reducing reliance on manual labor.

A new LIPA ERP system will generate improved reporting and integrate ERP capabilities with PSEG Long Island's ERP to enhance availability of data and provide greater predictive analytics to potentially detect patterns and improve decision making processes. It will allow the Authority to effectively track more detailed data, which can enhance processes, productivity and quality of reporting.

Deliverable: **Ranking:** High

New LIPA ERP system with accounts payable, general ledger, procurement and human resources modules. The new ERP system will be able to upload information from the PSEG Long Island SAP system.

Deliverables/Milestones	Due Date	Status	Comments
Complete acquisition for Project Management Services	5/4/2018	Completed	
Complete acquisition for System Implementation Services	12/31/2018	Completed	
Complete Project Initiation and Planning Phase	3/31/2019	Completed	
Perform the System Configuration and Integration/Data Conversion and Verification/System Testing/Training	9/30/2020	Completed	Implementation has required extending complet step from its original 5/31/2020 due date.
Go live and post-implementation support	10/30/2020	Completed	Revised pursuant to extension of testing step.

Cost Benefit Analysis:

LIPA estimates that it will incur incremental costs to develop a new ERP system totaling approximately $3 million to $5 million. On-going annual maintenance costs are estimated to range from $150,000 to $250,000. There may be some additional costs associated with a new ERP system, which may be identified prior to moving ahead with the effort.

The project work will be completed primarily with outsourced resources, and is estimated to require approximately 7,600 hours. There will be additional internal resource hours needed for implementation and training.

Benefits are dependent on the implementation of specific best practices. Benefits will include (1) ability to do improved analytical work (2) easier access to PSEG Long Island data and (3) automation for journal entry uploads. Overall benefits will be to improve the current process, enhance reporting and auditing capabilities. Labor savings will be de minimis.

The risk of implementing a new ERP system include data conversion error and implementation issues, which can be minimized with a controlled implementation. The risks of not completing this recommendation include missed opportunities for knowledge transfer, reduction of manually intensive activities, and implications of manual errors due to lack of interfacing systems.

Feedback: N/A.

Recommendation Number: **11** **Item Status** Completed

Recommendation:

Determine the feasibility and cost of establishing interfaces between PSEG Long Island's MicroStrategy, Profitability and Cost Management (PCM), and SAP systems to eliminate the need for manual data transfer processes. If cost effective, implement processes to allow electronic data transfer between the systems.

Assigned LIPA Staff: Donna Mongiardo, Vice President - Controller, Mujib Lodhi, Chief Information Officer and Senior VP of Customer Experience

Assigned PSEG Staff Margaret Keane - Executive Sponsor; Markus Ramlall - Team Leaders

LIPA Executive: Tamela Monroe, Chief Financial Officer

Objectives and Assumptions of the Recommendation:

The objective of the audit recommendation is to automate the current manual process of uploading budget data from Profitability and Cost Management (PCM) system into the SAP financial system to reduce the possibility of errors and improve the efficiency of PSEG Long Island's budget preparation process

Deliverable: **Ranking:** Low

PCM is the existing Enterprise budget system used by PSEG and all the affiliates, including PSEG Long Island. The budget data in PCM is uploaded into SAP Enterprise financial system so that budget and actual data can be analyzed. However, currently it is a manual process to upload budget data from PCM to SAP.

Both systems are in consideration for replacement and active projects are underway to select the new system and implement accordingly. PSEG's SAP system is a lifecycle replacement candidate as SAP plans to sunset their ERP platform in 2025 while the PCM budget system needs to be upgraded prior to December 2021.

Due to the timing of the replacement these systems for PSEG, PSEG Long Island will include the requirements for developing interfaces with the systems identified by the audit into the planning and design of the replacement systems.

However, since 2017, PSEG Long Island has taken the following actions to mitigate the risks identified in the audit:

- Beginning in October/November of 2017, PSEG Long Island is using PCM for planning only headcount and labor. It is no longer being used to budget for Non- Labor components. All fringes and non-labor expenses are planned directly into the SAP system.

In regards to the labor, to confirm that all records are transferred from PCM to the SAP system, PSEG Long Island has implemented the following checks and balances to ensure accuracy:

- Previously, multiple analysts were able to upload data from PCM to SAP. Now,

there is one dedicated PSEG Long Island SAP analyst who has the ability to access the export / import transaction codes in PCM and SAP.

- The analyst generates an output file from PCM and then uses Win shuttle scripts (templates designed to upload into SAP) to perform the upload function to SAP. This file contains capacity hours, labor dollars, and headcount information.
- Once SAP is fully loaded with PCM labor data, the analyst performs a reconciliation comparing SAP with PCM. In addition, each planning and budget analyst further reviews the labor to check their assigned line of business by running the scheduled / plan transaction code in SAP and compares the data to the capacity report in PCM. Once all labor is confirmed correct in SAP, the next phases of the budget process begin directly in SAP and PCM is no longer utilized.

Deliverables/Milestones	Due Date	Status	Comments
Reconciliation process has been developed to compare SAP with PCM Once all labor is confirmed correct in SAP, the next phases of the budget process begin directly in SAP and PCM is no longer utilized	10/1/2017	Completed	
Win Shuttle scripts have been developed to automate the upload of PCM files	10/1/2017	Completed	
Established one dedicated PSEG Long Island SAP analyst who has the ability to access the export / import transaction codes in PCM and SAP	10/1/2017	Completed	
All fringes and non-labor expenses are planned directly into the SAP system	10/1/2017	Completed	

Cost Benefit Analysis:

Up until 2017, Labor, Non Labor and Fringes were planned and input into PCM to be uploaded into SAP, thus requiring reconciliation in SAP to make sure the data was transferred accurately. The reconciliation process for the Non-labor and Fringes took approximately 3 days for each of the 12 team members (288 man hours). Since late in 2017, the process changed and Non Labor and Fringes were directly input into SAP for the 2018 planning process and therefore reconciliation is no longer required for these components. Therefore, an overall savings of 288 man hours has been achieved for the organization as a result of this change in the planning process.

Risk Analysis:
Eliminate errors due to manual processing.

Customer Benefit Analysis:
N/A

Feedback: N/A.

Recommendation Number: 12 **Item Status** Completed

Recommendation:

LIPA should build on its recent success in “homogenizing” groups of debt covenants to increase consistency among other debt instruments.

Assigned LIPA Staff: Vinay Dayal, Director of Finance and Treasury

Assigned PSEG Staff 0 - None

LIPA Executive: Tamela Monroe, Chief Financial Officer

Objectives and Assumptions of the Recommendation:

NorthStar recognizes that LIPA has taken steps to "homogenize" its debt covenants. For instance in 2017, when establishing lines of credit with four banks, LIPA successfully negotiated with each to have each agreement conform to a single, "homogenized" set of terms and covenants and to allow proactive reporting on its website rather than individual paper filing thus streamlining and saving resources. A similar process was undertaken to standardize agreements in 2015. The objective of this recommendation is to encourage LIPA to continue this strategy of conforming future agreements to a single set of terms and covenants.

The recommendation is only actionable as agreements come up for renewal.

Deliverable: **Ranking:** Low

N/A.

Deliverables/Milestones	Due Date	Status	Comments
Homogenizing Letter of Credit agreement Bank Revolver renewal	3/22/2019	Completed	
Homogenizing Letter of Credit agreement with US Bank renewal	5/1/2020	Completed	
Homogenizing Letter of Credit agreement with TD Bank renewal	6/29/2021	Completed	

Cost Benefit Analysis:

The recommendation reflects existing practices and does not result in additional costs or benefits.

Feedback: N/A

Recommendation Number: **13** **Item Status** In Progress

Recommendation:

Develop evaluative criteria or other measures to assess the effectiveness of the planning process. Effectiveness should be measured based on specifics, for example:
• Number and timeliness of system studies
• Timeliness of development of [Project Justification Documents] PJDs
• Quality of PJDs (e.g., do they contain all requisite information?)
• Relative accuracy of conceptual level estimates

Assigned LIPA Staff: Michael Simione, Director of Transmission and Distribution System Oversight

Assigned PSEG Staff Michael Sullivan - Executive; Anie Philip - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

The objective is to implement evaluative criteria so that the effectiveness of planning process can be measured and improved.

Deliverable: **Ranking:** Moderate

This initiative will deliver a list of measures that will be published on a periodic basis to indicate the effectiveness of the planning process.

Deliverables/Milestones	Due Date	Status	Comments
Solicit feedback from various internal and external stakeholders, including LIPA and the DPS	10/29/2018	Completed	
Develop proposed criteria and measures	11/15/2018	Completed	
Hold meeting with internal and external stakeholders, including LIPA and the DPS to review the proposal	12/14/2018	Completed	
Obtain Executive Approval and finalize criteria and measures	1/15/2019	Completed	
Implementation	5/1/2019	Completed	
Confirm effectiveness of criteria and measures.	12/31/2019	In Progress	See comment below under Feedback.

Cost Benefit Analysis:
Costs are not significant. Improvements in planning effectiveness can yield appreciable savings.

Risk Analysis:
No risk expected with this recommendation.

Customer Benefit Analysis:
Improvements in the planning process will create improvements in system performance and will also improve effectiveness of approved budgets.

Feedback: Management Audit recommendations in 2013 and 2018 pointed to needed reforms in capital project optimization, capital project estimating, risk and contingency management, project management performance reporting, the definition and quantification of work standards, and other areas that contribute to the development and management of capital projects and the capital budget.

LIPA deems implementation of this recommendation still In Progress and has taken the following course of action.On August 11, 2021, the LIPA Board of Trustees, with input from PSEG Long Island and the recommendation of LIPA Staff, adopted a Project Implementation Plan (PIP) for Capital Budget Development and Monitoring Process Improvements to formerly document the annual process related to the capital project and budget/8-year Financial Plan. An improved process governing Capital Budget and Capital Project review and approval, including managing changes during the year, will enhance transparency and accountability of customer funds and ensure adequate information flow to LIPA to conduct oversight on behalf of our customers. The PIP includes the following:

(1) PSEG Long Island must complete Project Justification Descriptions ("PJDs") for a capital project to be considered by the LIPA Board for inclusion in the LIPA Consolidated Budget and any project added during the year.

(2) If PSEG Long Island is unable to provide a full and complete PJD prior to consideration of the Capital Budget by the LIPA Board, PSEG Long Island may submit a preliminary PJD as part of its Capital Budget request, which LIPA may recommend to the Board on a contingent basis, therefore outside of the PSEG Long Island Capital Budget.

(3) PSEG Long Island should provide LIPA with annual updates to PJDs highlighting changes and reflecting the current cost estimates, including risk and contingency, schedule, and scope details as part of the annual budget process.

(4) PSEG Long Island must consult with LIPA staff prior to reallocating budgeted funds, and PSEG Long Island must submit to LIPA a Capital Budget Reallocation Explanation form.

(5) If a funded Capital Project included in the LIPA Consolidated Capital

Budget is postponed, PSEG Long Island must identify the change in the project schedule and propose to carryover the approved Capital Budget funds from the current adopted Capital Budget to the proposed Capital Budget as part of the next year's Capital Budget adoption process.

These recommendations have been incorporated into the proposed reformed contract with PSEG Long Island, which will be considered by the Board in December 2021.

A joint PSEG Long Island and LIPA capital working group will assess any future enhancements to the PJDs, including providing additional financial information including but limited to an Operating Budget impact statement, and a review of affected stakeholders and community outreach plan.

Finally, PSEG Long Island will work to address LIPA's PJD requests for 2022. Changes that cannot be accommodated for 2022 will be identified and addressed for the 2023 budget process.

Recommendation Number: **14** **Item Status** Completed

Recommendation:

Perform detailed cost-benefit analyses consistent with Transmission Planning's analyses for projects related to thermal overload.

Assigned LIPA Staff: Michael Simione, Director of Transmission and Distribution System Oversight

Assigned PSEG Staff Michael Sullivan - Executive Sponsor; Joe Cicalo - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

Our objective is to assure that the all projects receive an appropriate level of cost benefit analysis. Key assumptions are that different types of projects require different levels of cost benefit analysis, and that achieving the appropriate level of cost benefit analysis will assure optimal selection of projects, thereby optimizing overall investment results.

Deliverable: **Ranking:** Moderate

Clear guidance on what types of projects will receive which types of cost benefit analysis, and implementation processes to deliver results in accordance with the guidance. Guidance will include which type of cost benefit analysis will be required for various repair/replace scenarios.

Note that this action plan will also address completion of 2013 recommendations 9.4.2.

Deliverables/Milestones	Due Date	Status	Comments
Identify internal and external stakeholders, including LIPA and the DPS	12/31/2018	Completed	
Solicit feedback from T&D and stakeholders to determine which types of projects will receive which types of CBAs. The PSC's BCA framework order will be considered, and where reasonable and applicable, applied. Create a document summarizing decisions.	1/31/2019	Completed	
Review cost/benefit analysis approach and compare to approach recommended in first deliverable. Determine gaps.	2/1/2019	Completed	
Hold meeting to review proposal with internal and external stakeholders, including LIPA and the DPS.	3/1/2019	Completed	
Create new analysis templates and training materials.	3/31/2019	Completed	
Train relevant personnel and implement new procedure.	5/1/2019	Completed	

Cost Benefit Analysis:

Costs to develop cost benefit guidelines are minimal. Costs to create enhanced cost benefit materials, in line with the new guidelines, will be moderate. It is expected that benefits associated with optimized project selection will offset implementation costs. Benefits include optimized value from budgeted funds and selected projects.

Risk Analysis:
Failure to strike the proper balance of number and scope of cost benefit analysis will lead to less than optimal results.

Customer Benefit Analysis:
Improvement in project alternative analysis.

Feedback: N/A.

Recommendation Number: 15 **Item Status** Completed

Recommendation:

Continue implementing the vegetation management program to meet annual targets. Complete the mainline hardening program.

Assigned LIPA Staff: Donald J. Schaaf, Senior Manager of Emergency Response Oversight

Assigned PSEG Staff Michael Sullivan - Executive Sponsor; Mark Cerqueira - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

PSEG Long Island will continue implementing the vegetation management ("VM") program to meet annual targets and complete the mainline hardening ("MLH") program. Existing VM policies and procedures will be reviewed in order to meet annual targets. Existing mainline MLH program policies and procedures will be reviewed in order to complete the program. Monitoring and reporting will be enhanced and corrective action plans implemented as needed.

Deliverable: **Ranking:** High

The deliverables for this recommendation include program goals, tracking processes, and annual reporting for the main line hardening and vegetation management programs.

Deliverables/Milestones	Due Date	Status	Comments
Verify mainline hardening (MLH) schedule. Implement any necessary changes to meet targets.	10/1/2018	Completed	
Identify the Vegetation Management goals for 2018, 2019, 2020 and 2021 program.	11/1/2018	Completed	
Design and establish tracking criteria, and frequency and forum for reporting of Vegetation Management goals.	12/31/2018	Completed	
Design and establish tracking criteria, and frequency and forum for reporting of mainline hardening goals.	12/31/2018	Completed	

Cost Benefit Analysis:

Mainline hardening total program costs are $729 million. The program was previously authorized based on storm outage reductions and storm damage cost reductions.

The vegetation management program costs are expected to total approximately $30-40 million annually. Benefits from the program will include improvements to blue sky and storm SAIFI, SAIDI and MAIFI, as well as improvements to Customers Experiencing Multiple Interruptions (CEMI). Storm cost savings will also be realized.

Not completing the Mainline Hardening and Vegetation Management programs could potentially result in a decline in performance related to SAIFI, SAIDI, MAIFI and CEMI and would result in loss of federal funding. Factors external to the MLH and VM programs can impact annual spend levels and timing of completions of both programs.

Implementation will result in customer benefits in the form of improvements to blue sky and storm SAIFI, SAIDI and MAIFI, as well as improvements to CEMI and storm cost savings.

Feedback: N/A.

Recommendation Number: 16 **Item Status** Completed

Recommendation:

Complete the Emergency Response Training for all employees as required.

Assigned LIPA Staff: Donald J. Schaaf, Senior Manager of Emergency Response Oversight

Assigned PSEG Staff Michael Sullivan - Executive Sponsor; Larry Torres - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

Continual training, in conjunction with periodic exercises and performance of duties during actual emergency events, is a critical element of the emergency preparedness process and an effective means to refresh and reinforce skills in preparation for restoration events. The purpose of this action plan is to ensure that all employees receive the appropriate level of emergency response training.

Deliverable: **Ranking:** Low

The Emergency Restoration Plan (ERP) will be modified to more accurately describe the restoration training program. This will include a clarification of language in ERP that defines training requirements, clearly differentiating between those with traditional and non-traditional storm roles and includes language that defines training completion requirements (i.e., complete 90% planned training per year) to ensure clear definition of compliance. Include updated language in 2019 ERP Plan Filing (due to DPS December 15, 2018) and commence application of compliance with 2019 training plan.

Deliverables/Milestones	Due Date	Status	Comments
Define the tracking criteria, the frequency and forum for status reporting to oversee delivery of the training. Implement tracking system.	12/1/2018	Completed	
Clarify language in ERP that defines training requirements, clearly differentiating between those with traditional and non-traditional storm roles.	12/1/2018	Completed	

Cost Benefit Analysis:

Storm role training will have a minimal cost impact and will help promote more effective storm response.

Risk Analysis:
No appreciable risks.

Customer Benefit Analysis:
Well trained staff capable of performing assigned roles during storm periods will contribute to overall positive response and customer experience.

Feedback: N/A.

Recommendation Number: 17 **Item Status** In Progress

Recommendation:

Improve Emergency Response Training in the ERP to identify type of training and frequency by position.

Assigned LIPA Staff: Donald J. Schaaf, Senior Manager of Emergency Response Oversight

Assigned PSEG Staff Michael Sullivan - Executive Sponsor; Larry Torres - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

The purpose of this action plan is to ensure the restoration training program accurately depicts the training requirements (i.e., type and frequency) and status of training for PSEG Long Island employees with non-traditional restoration roles.

Deliverable: **Ranking:** Low

The Emergency Preparedness Department will review the Emergency Restoration Assignment Database to verify the number of employees serving in traditional versus non-traditional storm roles. Those employees assigned to traditional storm roles are not required to attend separate emergency restoration training, as they perform their regular blue-sky role during restoration events. Non-traditional storm roles will then be broken down by title (i.e., Damage Assessor, Crew Guide, etc.) to ensure training, if necessary, exists for each distinct role identified. Once complete, Emergency Preparedness will confirm when each employee last attended the appropriate restoration training to which they were assigned. Lastly, utilizing the identified training cycle, a training matrix will be developed and training will be tracked to ensure that employees complete their required training (either Initial or Refresher) at the appropriate frequency. The Emergency Preparedness Department will also modify the Emergency Restoration Plan (ERP) to clearly depict the above activities.

Deliverables/Milestones	Due Date	Status	Comments
Prepare a document identifying training requirements by position, including training type (i.e., on the job training, workshop, classroom, etc.) and recommended training frequency.	12/1/2018	Completed	

Cost Benefit Analysis:
Identifying emergency role training requirements will have a minimal cost impact and will create a very small benefit in employee qualifications.

Risk Analysis:
No appreciable risks.

Customer Benefit Analysis:
Well trained staff capable of performing assigned roles during storm periods will contribute to overall positive response and customer experience.

Feedback: Following Tropical Storm Isaias, the LIPA Board adopted a series of recommendations to address Emergency Response Plan (ERP) deficiencies found by the Isaias Task Force. Chief among the recommendations was a re-organization of emergency planning, training, staffing and assignment of roles under a single Emergency Planning Team within PSEG Long Island.

LIPA also recommended the hiring of a Director of Emergency Management and development of more rigorous ERP training and exercises to: (a) test decision making, decision paths, and how information passes between functions, and (b) exercise well-developed business continuity plans, and use of training simulations and exercises that challenge and better prepare the response team with realistic scenarios.

PSEG Long Island has included in the ERP an "Exercise and Training Schedule" and hired an outside consultant to re-organize the Hurricane Tabletop Exercise for 2021. LIPA staff continues to work with PSEG Long Island to address specific improvement opportunities in ERP staffing, and to improve the quality and credentials of consultants used during drills and exercises. Therefore, the implementation plan for this recommendation remains In Progress.The reformed contract with PSEG Long Island, which will be considered by the Board in December 2021, provides LIPA with the ability to review and approve training exercises and requires the hiring of a Director of Emergency Management.

Recommendation Number: **18** **Item Status** In Progress

Recommendation:

Complete development of the CMMS.

Assigned LIPA Staff: Michael Simione, Director of Transmission and Distribution System Oversight

Assigned PSEG Staff Michael Sullivan - Executive Sponsor; John Mccumiskey - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

The Computerized Maintenance Management System (CMMS) software platform has been launched and is presently being utilized by Asset Management (AM) to better understand the health and performance of key T&D assets such as station transformers and load tap changers. Additional enhancements and modifications to the platform are planned and were communicated within the audit process. The action plan below identifies the high-level activities necessary to enhance the existing platform and complete the development of the CMMS tool.

Additionally, beyond CMMS, there is an objective to establish broad AM components that, in conjunction with CMMS, will improve system performance and reduce system costs.

Deliverable: **Ranking:** Moderate

To satisfy the audit recommendation, PSEG Long Island will:

• Create a schedule indicating the deliverables required to complete the development of CMMS
• Create a schedule indicating the deliverables required to complete the development of PSEG Long Island AM
• Create a document summarizing the forum, frequency and content of CMMS and AM status updates
• Complete the deliverables from the CMMS and AM schedules

CMMS schedule will focus on implementing more powerful analytics to further enable benefits associated with condition based maintenance.

To complete closure of 2013 recommendation 12.4.3, an asset management road map has been developed to cover other asset management items, beyond CMMS. The supplement to recommendation #18 addresses the 2013 NorthStar 12.4.2 recommendation detailing specific deliverables through 2022. Within each deliverable, specific asset management personnel are engaged to ensure that actions and initiatives are being progressed to completion as these items are goals and objectives within the performance plans for these employees. Specific progress reporting cycles have also been identified with periodic assessments being performed by Asset Strategy.

Deliverables/Milestones	Due Date	Status	Comments
Document format, timing and forum for providing status updates to CMMS and Asset Management schedule.	12/1/2018	Completed	The Supplement Recommendation #18 addresse North Star 12.4.2 recommendation detailing spe deliverables through 2022. Within each deliver specific asset management personnel are engage actions and initiatives are being progressed to c as these items are goals and objectives within th performance plans for these employees. Specifi reporting cycles have also been with periodic as performed by Asset Strategy Manager and repo VP T&D and shared with LIPA.
Update the current CMMS / Asset Management schedule indicating deliverables and milestones for full implementation of CMMS and Asset Management.	12/1/2018	Completed	
Complete all Milestones associated with Phase 1 of the Asset Management / CMMS implementation plan.	5/22/2020	Completed	
Complete all Milestones associated with Phase 2 of the Asset Management / CMMS implementation plan. Specific Phase 2 Milestones. (See detail).	12/31/2021	In Progress	Complete all Milestones associated with Phase Asset Management / CMMS implementation pl Specific Phase 2 Milestones include; Create Asset Class Specific Repair/Replace Stra (2013 Recommendation 12.4.2), Initiate 10 yea to Install monitors on 539 transformers (<100 M Implementation of non-operational data into co assessment (Circuit breakers), Initiate Long Ter Investment Plans, Pilot Program to Install Bushi Monitors on Select Transformers, Production of comprehensive Asset Management Policy docu associated Asset Class Specific Plans (2013 Recommendation 12.4.3), and Implementation operational data into condition assessment (UG transmission cables)>
Complete all Milestones associated with Phase 3 of the Asset Management / CMMS implementation plan.	12/31/2022	In Progress	Complete all Milestones associated with Phase Asset Management / CMMS implementation pl Specific Phase 3 Milestones include; Repair / Replace Algorithms (Power Transform / Replace Algorithms (Circuit Breakers), Repair Algorithms (UG Transmission), and Implementa non-operational data into condition assessment transformers)

Cost Benefit Analysis:

Cost estimates based on additional steps required by LIPA's Process Improvement Plan will be updated.

Customer Benefit Analysis:

Implementation of this recommendation will result in increased system reliability by improving the performance of critical substation assets such as station transformers and breakers. Understanding when assets have reached end of life and planning for replacement prior to failure will result in less impact to customers and reduce risk for extended system outages. For LIPA, as the asset owner, this implementation will provide for more efficient use of capital and O and M budgets as replacement of critical assets will be made based on asset health data that will extend the life of these assets.

Feedback: Asset management is a key responsibility in any utility. Both the 2013 and 2018 management audits found significant deficiencies in how the previous and current service providers managed LIPA's assets. Auditors concluded in 2018 that implementation of the Centralized Maintenance Management System (CMMS), first noted in 2013, had still not been completed.

In 2019, LIPA engaged an internationally recognized asset management consulting firm that worked with PSEG Long Island to independently review processes and recommend improvements. These included better evaluation of substation asset life cycles, and the development of plans and procedures for repair or replacement of key components according to well-defined timetables.

Despite progress, CMMS remains incomplete. PSEG Long Island's asset management and maintenance functions are fragmented and do not provide an enterprise-wide understanding of system assets.

The LIPA Board adopted recommendations and PIPs related to asset management which will bring needed upgrades to PSEG Long Island's asset management program, including reporting to LIPA on reliability assessments of plant asset performance; completion of asset management plans for transmission, distribution, and substation infrastructure, completion of the CMMS upgrade as set forth in 2013 and 2018 and expansion of the CMMS upgrade to include an Enterprise Asset Management System (EAMS) to capture and evaluate the health of system assets prior to breakdowns; and, development of a Strategic Asset Management Plan that binds work activities, investment commitments, and decision making in an enterprise-wide framework.

These improvement plans are expected to be finalized by PSEG Long Island and delivered to LIPA by the end of 2021. Implementation is expected to last through 2025. LIPA has proposed three performance metrics for 2022 related to advancing asset management that are consistent with the Board recommendations.

Recommendation Number: 19 **Item Status** Completed

Recommendation:

Continue monitoring SAIFI both from a system and cause basis. Continue targeting and prioritizing programs that address reliability.

Assigned LIPA Staff: Donald J. Schaaf, Senior Manager of Emergency Response Oversight

Assigned PSEG Staff Michael Sullivan - Executive Sponsor; Wayne Baldassare

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

Our objective is to drive ongoing improvement to SAIFI and related metrics through prioritized targeted system improvement work. Our assumption is that appreciable reliability improvements can be realized through targeted prioritized investments.

Deliverable: **Ranking:** High

Develop an approved document for summarizing annual plans for SAIFI, communicating results, and short term/long term planning to support scorecard metrics.

Deliverables/Milestones	Due Date	Status	Comments
Summarize the key aspects of SAIFI program including programs approaches goals and program management practices and implement according to plan.	11/1/2018	Completed	
Define the tracking criteria, the frequency and forum for status reporting to oversee delivery of program goals. Implement tracking system.	3/15/2019	Completed	

Cost Benefit Analysis:

Prioritized targeted system improvement work should lead to improved SAIFI performance. Additional costs or savings are not expected as the recommendation continues existing programs.

Risk Analysis:
If not completed, there may be a reduction in SAIFI performance.

Customer Benefit Analysis:
Benefits include better understanding of system conditions and weaknesses and the development of proactive targeted programs to improve reliability and improve asset health condition.

Feedback: N/A.

Recommendation Number: 20 **Item Status** Completed

Recommendation:

Perform all policies, procedures and control functions that are currently and formally required.
•PSEG Long Island should conduct all audits as required in the A&R OSA.
•Adhere to formal document control policies and procedures.
•PSEG Long Island should follow the PMP Playbook and its procedures.

Assigned LIPA Staff: Kathleen Mitterway, Senior Advisor for Audit

Assigned PSEG Staff Margaret Keane - Executive Sponsor ; Rocky Shankar - Team Leader

LIPA Executive: Bobbi OConnor, Chief Administrative Officer & Board Secretary

Objectives and Assumptions of the Recommendation:

The purpose of the recommendation is to ensure audits required per the A&R OSA are performed, that policies and procedures are adhered to, and that the Project Management Plan (PMP) Playbook and its procedures are followed. Observation #5 noted that "PSEG Long Island's procedures developed to date address many components of capital project, but as yet have not evolved to fully support project management and control." (Page IX-18) PSEG Long Island will develop updated procedures that address the major components of capital project delivery and ensure that all functions are being performed to fully support effective project management and controls.

Additionally, these deliverables will also address the 2013 Recommendation 10.4.11, to improve capital project document control.

Deliverable: **Ranking:** Moderate

• The A&R OSA stipulates PSEG Long Island will provide LIPA on an annual basis: i) an annual audit of capital improvement made in the prior contract year. The audit scope shall include the accuracy of plant records, maps, and asset maintenance databases. ii) Physical inventory of all capital assets from time to time. Starting in 2019, PSEG Long Island Project Management Office, Training Support & Contract Services, and the Electric East & West Divisions will prepare a list of capital projects implemented in the prior year. Internal Audit will select a sample of projects from the listings and test to ascertain they are properly reflected in the appropriate systems. PSEG Long Island Internal Audit will conduct testing to determine the business' adherence to documented control policies and procedures as part of its testing of internal controls annually and during its performance of internal audits and reviews.

• Projects and Construction (P&C) Observation #6 noted that "PSEG Long Island has not fully adopted and implemented the PMP and the seven procedures to deliver capital project." As a result of the above observation, PSEG Long Island will review the existing procedures listed below to determine the major components of capital project delivery, if any, that are not addressed.

- Project Management Play Book TD-PM-001-0003
•Project Execution Plan TD-PM-002-0001
•Project Authorization TD-PM-001-0001
•Status Reporting TD-PM-002-0006
•Project Scope Management TD-PM-001-0004
•Document Management TD-DM-001-0001
•Project Cost Management TD-PM-002-0004
•Construction Management and Contract Administration TD-CM-001-0001
•Project Scheduling TD-PM-002-0002
•Invoice Management TD-CM-001-0002

Following review of the procedures, PSEG Long Island will revise the existing procedures and/or develop new procedures, implement and train all key personnel.

Deliverables/Milestones	Due Date	Status	Comments
Review existing procedures to determine major components that are missing	10/5/2018	Completed	
Revise and/or develop procedures	12/3/2018	Completed	
Train relevant Projects & Construction personnel and key stakeholders	2/1/2019	Completed	
Implementation of the revised or new procedures	3/29/2019	Completed	
PSEG Long Island Internal Audit will select a sample of projects from the listings and test to ascertain they are properly reflected in the appropriate systems	6/30/2019	Completed	
PSEG Long Island Internal Audit conducts testing to determine the business' adherence to documented control policies and procedures as part of its testing of internal controls annually and during its performance of internal audits and reviews	1/31/2020	Completed	

Cost Benefit Analysis:

• Internal Audit: Conducting annual audits of capital improvements made in the prior year and testing of control policies and procedures are sound business practices to ascertain fraudulent activities are not occurring and that employees are adhering to company policies and procedures.

• P&C: Updating the procedures that address the major components of capital project delivery will better document roles, responsibilities and processes, which will result in the effective use of capital and increased project management performance.

Risk Analysis:

The risk of not accounting for capital improvements made in the prior year and testing of control policies and procedures may lead to the occurrence of inaccurate records or fraudulent activities.

Customer Benefit Analysis:
Confirming that our asset records are accurate helps to properly account for LIPA's assets and that PSEG Long Island is not over/under stating the assets which could impact revenue requirements and ultimately the customer bill.

Feedback: N/A.

Recommendation Number: 21 **Item Status** Completed

Recommendation:

The URB management processes and controls should be audited annually to confirm adherence to its charter and control policies and procedures.

Assigned LIPA Staff: Kathleen Mitterway, Senior Advisor for Audit

Assigned PSEG Staff Margaret Keane - Executive Sponsor; Rocky Shankar - Team Leader

LIPA Executive: Bobbi OConnor, Chief Administrative Officer & Board Secretary

Objectives and Assumptions of the Recommendation:

The purpose of the recommendation is to ensure the Utility Review Board (URB) Charter is up-to-date, that URB meeting minutes are documented and actions are tracked, and that capital project change requests contain specific and detailed information to enable the URB to make an informed decision to either approve or deny the request.

Deliverable: **Ranking:** Low

PSEG Long Island Internal Audit: a) Recently completed a URB Audit (July 2018). While some observations were identified, the URB process has improved since the Review conducted in 2016. In addition, most of the findings cited in the NorthStar Management Audit Report are no longer applicable, as they were addressed prior to the PSEG Long Island Internal Audit.

PSEG Long Island Internal Audit will conduct future URB Audits on a bi-annual basis.

Deliverables/Milestones	Due Date	Status	Comments
Issuance of PSEG Long Island Internal Audit report on the URB process	7/31/2018	Completed	

Cost Benefit Analysis:

Conducting periodic internal audits will lend itself to evaluating the effectiveness of controls and adequacy of documentation within the URB process. Potential risks within the URB process could include:

• Pertinent information is inaccurate or omitted from the project documentation submitted for URB review, resulting in incorrect project funding.
• Capital projects not sufficiently scrutinized by the URB may lead to incorrect project funding.
• Unauthorized project costs are incurred, resulting in potential excessive expenditures.
• Property, Plant and Equipment balances are misstated if project costs are recorded incorrectly. Budget variance analysis is based on inaccurate information.
• Variance analysis is compromised due to inaccurate information.

The periodic audits will mitigate these risks.

Feedback: N/A.

Recommendation Number: 22 **Item Status** Completed

Recommendation:

Develop and implement procedures related to quality assurance and quality controls for capital programs and projects.

Assigned LIPA Staff: Michael Simione, Director of Transmission and Distribution System Oversight

Assigned PSEG Staff Margaret Keane - Executive Sponsor; Anthony Stallone - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

A well-developed QA/QC program will monitor effective capital project delivery and assure that all functions are being performed to fully support project management and control.

Observation #12 notes that "PSEG Long Island does not have a capital program and project quality assurance and quality control (QA/QC) program." PSEG Long Island will update and enhance its existing QA/QC procedures as set forth below.

Deliverable: **Ranking:** Moderate

The work plan includes the following major activities:
- Develop updated procedures as noted under Recommendation
- Define the QA/QC function and methodologies
- Define roles and responsibilities (senior management, managers, and supervisors)
- Establish a QA/QC Program Leader within the PMO organization
- Develop and implement the QA/QC Program procedures and supporting processes

Deliverables/Milestones	Due Date	Status	Comments
Define the QA/QC function and methodologies	2/1/2019	Completed	
Establish a QA/QC Program Leader within the PMO organization	3/1/2019	Completed	
Develop updated procedures as noted under Recommendation Number REC0020 (Procedures)	4/1/2019	Completed	
Define roles and responsibilities (senior management, managers, supervisors)	6/1/2019	Completed	
Develop the QA/QC Program procedures in accordance with industry best practices and in compliance with all applicable government policies.	6/1/2019	Completed	
Train all PMO and Projects & Construction personnel and implement new procedures and processes.	9/1/2019	Completed	

Cost Benefit Analysis:

The cost to achieve the process change will be absorbed across the spectrum of Project Management Office functions; however we anticipate the addition of one (1) FTE ($150,000) to act as overall QA/QC program oversight.

Developing the QA/QC program and procedures that address the major components of capital project delivery will better document roles, responsibilities and processes which will result in the effective use of capital and increased project management performance.

Risk Analysis:

The lack of a QA/QC program will decrease efficiency on the capital projects and will diminish use of the capital budget.

Customer Benefit Analysis:

Implementing a rigorous QA/QC program may increase the effectiveness in the use of capital and project management performance.

Feedback: N/A.

Recommendation Number: 23 **Item Status** Completed

Recommendation:

Address the deficiencies in project estimating by making organizational and process improvements and creating a capital project estimating function/organization equipped with appropriate tools.

- Establish an organizational group of professional estimators for transmission and distribution that will develop estimates for planning, engineering and construction.
- Use these internal estimators to set and validate baseline estimates established for contractors.
- Assess the process used to develop and update estimates for completion.
- Establish project estimating tools such as a formal data base of project estimates and support tools such as software and develop and manage an estimating data true-up process.
- Review and document inflation and escalation factors and analyses used to predict project completion costs for each project estimate.
- Review project budget numbers and cost reporting information to determine whether they represent the most currently approved budget and cost data.
- Determine whether cost and schedule systems are integrated and whether the project master schedule is appropriately integrated with the approved project budget.
- Formally document project cost reviews at each level of estimate in detail and at various stages of project completion as called for in Project Cost Management (Procedure TD-PM-002-0004).
- Review project guidelines for performing trend analyses and exception reporting.
- Evaluate how trends were identified, analyzed, brought to management's attention, and how they were resolved.
- Determine whether cost control systems, forecasting and trend analyses directed attention to bulk rates, commodities and productivity to reveal above/below average performance.
- Continuously verify the accuracy of estimates versus the actual project cost and maintain a record of updates to the estimating database.

Assigned LIPA Staff: Michael Simione, Director of Transmission and Distribution System Oversight

Assigned PSEG Staff Margaret Keane - Executive Sponsor; Anthony Stallone - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

The objective of establishing a capital project estimating function/organization is to improve the accuracy of forecasting and decision-making and to enable better allocation of available capital.

Deliverable: **Ranking:** High

PSEG Long Island's estimating group function was established in 2017 and the majority

of the recommended process improvements were implemented at the same time the Audit took place (between February 2017 and March 2018). Therefore, the audit findings were not based on the new estimating function and process improvement implementation.

The new estimating software/database mentioned in the recommendations was implemented in July 2018 (expected to take full effect by the end of 2018). This implementation was after the audit report was finalized.

The work plan for cost and schedule integration is covered in the response to Recommendation 24.

The following findings and recommendations were addressed between February 2017 and March 2018 . These deliverables also addressed the 2013 Recommendation 10.4.6, deficiency findings in project estimating by making organizational and process improvements and creating a capital project estimating function/organization equipped with appropriate tools.

- Establish an organizational group of professional estimators for transmission and distribution that will develop estimates for planning, engineering and construction: The Estimating group is now staffed with two estimators and one estimating group leader. Additional estimators positions to be filled in 2018-2019.
- Use these internal estimators to set and validate baseline estimates established for contractors: The internal estimators now provide cost estimate for development of the bid strategy.
- Assess the process used to develop and update estimates for completion: There is a defined process for updating estimates at specific stages through the project lifecycle.
- Establish project estimating tools such as a formal data base of project estimates and supports tools such as software and develop and manage an estimating data true-up process: Sage estimating software was delivered July 2018, and is expected to be in full production by December 31, 2018.
- Review and document inflation and escalation factors and analyses used to predict project completion costs for each project estimate: An inflation / escalation factor is now applied to each project estimate.
- Review project budget numbers and cost reporting information to determine whether they represent the most currently approved budget and cost data: The review of budget numbers and cost reporting is implemented and being used as a part of the URB process
- Formally document project cost reviews at each level of estimate in detail and at various stages of project completion as called for in Project Cost Management (Procedure TD-PM-002-0004): The project cost reviews at each level of estimate are implemented and are now incorporated into the URB process.
- Evaluate how trends were identified, analyzed, brought to management’s attention, and how they were resolved: The Estimating group performs the trend analysis and report to management. As an example in 2018, OH construction cost was identified to be higher than anticipated due to out of

state labor constraints.

The following findings / recommendations will be addressed as indicated and noted in the deliverable table below.

- Determine whether cost and schedule systems are integrated and whether the project master schedule is appropriately integrated with the approved project budget: The implementation of the cost and schedule integration will be executed in two phases. Phase 1: Manually match cost and schedule; Phase 2: Work with IT to evaluate methodology to integrate to cost and schedule software. Implementation date for Phase 2 will be developed upon review with IT and Business.
- Review project guidelines for performing trend analyses and exception reporting: See Recommendation No. 26 (Project Management Performance Measures).
- Determine whether cost control systems, forecasting and trend analyses directed attention to bulk rates, commodities and productivity to reveal above/below average performance: See Recommendation No. 26 (Project Management Performance Measures)
- Continuously verify the accuracy of estimates versus the actual project cost and maintain a record of updates to the estimating database: The implementation of this recommendation is in progress. Material cost is being monitored against historical cost and the estimating database is being updated (part of the current estimating process). Contractor cost monitoring is improving and internal labor cost validation is still in progress.

Deliverables/Milestones	Due Date	Status	Comments
Review and document inflation and escalation factors and analyses used to predict project completion costs for each project estimate	6/1/2017	Completed	
Assess the process used to develop and update estimates for completion	10/1/2017	Completed	
Use these internal estimators to set and validate baseline estimates established for contractors	10/30/2017	Completed	
Formally document project cost reviews at each level of estimate in detail and at various stages of project completion as called for in Project Cost Management (Procedure TD-PM-002-0004)	12/31/2017	Completed	
Review project budget numbers and cost reporting information to determine whether they represent the most currently approved budget and cost data	12/31/2017	Completed	
Establish an organizational group of professional estimators for transmission and distribution that will develop estimates for planning, engineering and construction	4/30/2018	Completed	
Evaluate how trends were identified, analyzed, brought to management’s attention, and how they were resolved	6/1/2018	Completed	
Establish project estimating tools such as a formal data base of project estimates and support tools such as software and develop and manage an estimating data true-up process	7/24/2018	Completed	
Establish a process for ongoing verification of the accuracy of estimates versus the actual project cost and maintain a record of updates to the estimating database	9/1/2018	Completed	

Determine whether cost and schedule systems are integrated and whether the project master schedule is appropriately integrated with the approved project budget	4/1/2019	Completed	
Determine whether cost control systems, forecasting and trend analyses directed attention to bulk rates, commodities and productivity to reveal above/below average performance	9/1/2019	Completed	
Review project guidelines for performing trend analyses and exception reporting	9/1/2019	Completed	

Cost Benefit Analysis:

The cost of the above-mentioned implemented actions is following:

- Cost of three full time employees: $450,000 per year (2 positions are filled, one position remaining to be filled)
- Cost of Sage implementation project: $500,000 (one-time cost incurred July 2018); $130,000 (annual software and system maintenance cost).

Risk Analysis:

With regards to cost and schedule systems integration, PSEG (Enterprise) is evaluating the replacement of the existing SAP system at its end of life in 2025, and integration analysis will be included into that review.

Customer Benefit Analysis:

Improving estimates will allow PSEG Long Island to better prioritize capital investments which will ultimately improve the reliability of the electric system.

Feedback: N/A.

Recommendation Number: 24 **Item Status** In Progress

Recommendation:

Utilize a WBS in the initial phases of the project justification and conceptual estimating, and continue their refinement as the project progresses.
• Develop well-defined work packages that can be used to track and measure project performance based on earned value.
• Plan work in logical work groupings or packages and subdivide into smaller work groupings. Ensure that activities required to perform the work in each group are identified, defined, and dependent relationships established.
• Formalize the use of WBS elements by all project participants in their respective areas of responsibility and as an identification tool for project management performance measurement.
• Use the WBS in procurement/contracting activities and specify the WBS in contractor Requests for Proposals.
• Use the WBS for project costing and as a means to assess the impact of programmatic changes in funding levels on work content, schedules, and contractual support.
• Prepare cost estimates for each WBS element to assist budgeting and project validation.
• Integrate the WBS with PSEG Long Island's accounting systems, project cost management systems and schedule management systems.
• Integrate master work plans and detailed contractor schedules / activities to the WBS to permit integration of schedule information and to facilitate review of status reports and change proposals.
• Refine detailed project estimates initially prepared by WBS element and follow the manner in which the project work was planned, scheduled, estimated, funded and executed.

Assigned LIPA Staff: Michael Simione, Director of Transmission and Distribution System Oversight

Assigned PSEG Staff Margaret Keane - Executive Sponsor; Anthony Stallone - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

Effective capital project management uses a hierarchical Work Breakdown Structure (WBS) to organize project elements into logical bundles of functional work representing discrete work activities that enable scheduling, resource loading and objective progress measurement. The WBS provides the basic framework to plan, execute, and manage the project. WBS coding permits precise identification of project elements to allow accurate project management, budgeting, communication, cost reporting, scheduling and performance.

Effective, January 1, 2015, PSEG Long Island implemented a WBS that subdivides the phases of the project life cycle by project scope, deliverables and resources into manageable parts for which cost and time can be defined, estimated and managed. Its key features include: (1) tailored to the FERC capital asset accounting requirements in that each project is subdivided into major components based on the scope of work---

inside plant installation (substation), outside plant installation (circuit or segments of circuits), withdrawals or removals (substation and circuits) and salvage; (2) segregated by transmission and distribution scope of work and ultimately the corresponding assets of each; (3) each WBS in the structure has a unique fixed assets settlement rule which points the costs incurred against that specific WBS to the fixed assets financial system (Power Plant); and (4) allows the flexibility to place in service the major components of the project at different times where appropriate.

The purpose of the action plan is:
• Internally review the existing WBS and identify near term enhancements or improvements that can be made in order to align the scope of work, estimating, scheduling and forecasting into more meaningful, quantifiable and measurable elements of work or deliverables while, at the same time, maintaining compliance with fixed assets capital accounting requirements.
• Review industry best practices and identify additional modifications or tools that will support further refinement of the application and format of the WBS
• Utilize the enhanced or improved WBS to support the objectives of Recommendation IX-26 Project Management Performance Measures which is to report project management performance measures that focus on the effectiveness of cost estimation, earned value and schedule management.

Additionally, these deliverables will also address the 2013 Recommendation 10.4.5, to utilize a Work Breakdown Structure (WBS) in the initial phases of the project justification and conceptual estimating, and continue their refinement as the project progresses.

Deliverable: **Ranking:** Moderate

An internal review of the established WBS is in progress to address any immediate gaps or corrective measures required while maintaining alignment with our financial system and capital accounting requirements. PSEG Long Island will identify and develop enhancements or improvement to the existing WBS that is used within the PSEG Long Island financial system for new 2019 projects.

PSEG Long Island will engage a consultant to optimize the review current best practices relative to other utilities and provide guidance on specific optimization plans with a particular focus on the following specific recommendations:
• Develop well-defined work packages that can be used to track and measure project performance based on earned value.
• Plan work in logical work groupings or packages and subdivide into smaller work groupings. Ensure that activities required to perform the work in each group are identified, defined, and dependent relationships established.
• Formalize the use of WBS elements by all project participants in their respective areas of responsibility and as an identification tool for project management performance measurement.
• Use the WBS in procurement/contracting activities and specify the WBS in contractor Requests for Proposals.

• Use the WBS for project costing and as a means to assess the impact of programmatic changes in funding levels on work content, schedules, and contractual support.
• Prepare cost estimates for each WBS element to assist budgeting and project validation.
• Integrate the WBS with PSEG Long Island's accounting systems, project cost management systems and schedule management systems.
• Integrate master work plans and detailed contractor schedules / activities to the WBS to permit integration of schedule information and to facilitate review of status reports and change proposals.
• Evaluate the feasibility of automated capital project cost management software for tracking the projects and the use of WBS to allocate costs and relationships to budgets/funding sources for projects.
• Refine detailed project estimates initially prepared by WBS element and follow the manner in which the project work was planned, scheduled, estimated, funded and executed.

PSEG Long Island will utilize the enhanced or improved WBS to support the objectives of Recommendation IX-26 Project Management Performance Measures which is to report project management performance measures that focus on the effectiveness of cost estimation, earned value and schedule management. Following completion of the above key steps, PSEG Long Island will train appropriate personnel and implement the enhanced or improved WBS.

Deliverables/Milestones	Due Date	Status	Comments
Internal review to modify existing WBS and modify the existing WBS that is used within the PSEG Long Island financial system to support future enhanced reporting capabilities as recommended	12/28/2018	Completed	
Identify consultant with expertise in utility project management and WBS best practices	5/1/2019	Completed	
Engage consultant and identify industry best practices and specific recommendations to improve PSEG Long Island process/ systems and issue a formal report with recommendations for improvement	9/1/2019	Completed	
Implement best practices	1/1/2020	Completed	

Cost Benefit Analysis:

The estimated cost to engage a consultant and supporting internal resources to conduct an industry best practice evaluation and implement specific process improvements is $100,000.

Risk Analysis:
The lack of an effective WBS structure will make management of project deliverables challenging, obscure the costs of individual project components and diminish the effectiveness of overall project management.

Customer Benefit Analysis:
Potential benefits of implementing cost-effective WBS improvements could result in a more efficient use of capital that could help advance additional capital projects to improve reliability.

Feedback: PSEG Long Island still does not have a process to utilize a Work Breakdown Structure (WBS) for capital non-project work and therefore has not demonstrated to LIPA how it will achieve the goal of this and several related recommendations aimed at producing accurate cost estimation as part of project justification. Project estimating, and capital budget development continue to suffer from inaccuracies.

LIPA has proposed a performance metric, with deliverables due mid-2022. The metric will require PSEG Long Island to produce a process that integrates WBS and trains PSEG Long Island staff on use of such procedures. Therefore, LIPA deems this recommendation to be In Progress.

Recommendation Number: 25 **Item Status** In Progress

Recommendation:

Formalize and incorporate contingency management in capital project cost estimating and cost management. Formally report the expenditure of contingency funds separately from project estimates rather than inflate total project budget amounts. It is critical that reliable project budgets include contingency funds based on baseline estimates and their relative risks. In addition to project specific contingency elements, a contingency should also be established to address project scope changes and the need for unforeseen administrative or legal support. In order to audit contingency management, the following activities should be included:

- Review the project budgets and individual budget elements including management, design, construction and project specific contingencies.
- Determine whether contingency levels were appropriately evaluated and reviewed in each evolution of project estimating and each project stage.
- Relate contingency levels with recognized uncertainty and risks at specific levels of planning, design and construction.
- Evaluate project design for unforeseen conditions that might arise or be discovered during the design process and whether these conditions fall within the original project scope (i.e., the program requirements initially articulated by the user in the project definition stage).
- Establish and formalize project cost contingency to cover additional project detail such as unforeseen site conditions, interference, delays or other circumstances that would not have been known at initiation, and expanded or changed project scope not identified during the scope definition phase.

Assigned LIPA Staff: Michael Simione, Director of Transmission and Distribution System Oversight

Assigned PSEG Staff Margaret Keane - Executive Sponsor; Anthony Stallone - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

PSEG Long Island views this recommendation as having been fully implemented for the reasons described below.

Deliverable: **Ranking:** Moderate

In January 2018, changes were implemented to the calculations of Risk and Contingency (R&C) and Levels of Estimate for capital projects. The previous level of estimates and R&C was very conservative and would tie significant amount of the budget in reserve. A more granular approach will lower the funds encumbered by R&C while maintaining the appropriate level of risk management.

The changes to the method of calculation are applied to specific estimate elements at each Level of Estimate for each project. The following method is now used when developing revised Risk and Contingency guidelines:

- Project Management: highly predictable and relatively unaffected by changing

scope
- Design & Engineering: highly predictable cost and moderately impacted by scope changes
- Licensing & Permitting: relatively low percentage of project cost
- Equipment & Materials: moderately predictable cost and significantly impacted by scope changes
- Land & Land Rights: highly predictable cost and moderately impacted by scope changes
- Construction: moderately predictable cost and significantly impacted by scope and schedule changes

The above described method responds to each of the audit findings / recommendations identified below. Additionally, these deliverables also addressed the 2013 Recommendation 10.4.8, to incorporate contingency management in capital project cost estimating and cost management.

The following parts of the recommendation are addressed below:

- Review the project budgets and individual budget elements including management, design, and construction and project specific contingencies: Each of the budget elements as described above was reviewed and are included in the new Risk & Contingency Guideline Table below.

- Determine whether contingency levels were appropriately evaluated and reviewed in each evolution of project estimating and each project stage: Contingency levels are being evaluated at each project stage, and the Risk & Contingency Guideline Table is used to apply contingency amounts to estimated costs.

- Relate contingency levels with recognized uncertainty and risks at specific levels of planning, design and construction: The new Risk & Contingency Guideline Table (see below) relates the contingency with recognized uncertainty and risks at each level of estimate and for each cost element (project management, design and engineering, licensing and permitting, equipment and materials, land procurement and construction)

- Evaluate project design for unforeseen conditions that might arise or be discovered during the design process and whether these conditions fall within the original project scope (i.e., the program requirements initially articulated by the user in the project definition stage): The unforeseen conditions that might arise or be discovered during the design process is covered by the project cost contingency under Construction and Equipment & Materials cost elements throughout each project stage (level of estimate) – see Risk & Contingency Guideline Table below.

- Establish and formalize project cost contingency to cover additional project detail such as unforeseen site conditions, interference, delays or other circumstances that would not have been known at initiation, and expanded or

changed project scope not identified during the scope definition phase: The project cost contingency for any unforeseen site conditions, interference, delays or other circumstances that were not known at initiation of a project is covered under Construction cost element throughout each project stage (level of estimate) – see Risk & Contingency Guideline Table below. This recommendation has been completed.

Risk and Contingency Guideline Table

Description	order of magnitude	conceptual estimate	design estimate	definitive estimate
Project Mgmt/Admin	10%	10%	5%	5%
Design and Engineering	20%	15%	10%	5%
Licensing and Permitting	30%	20%	10%	5%
Equipment and Material	40%	20%	10%	5%
Land and Land Rights	20%	15%	10%	5%
Construction	40%	35%	30%	20%

Deliverables/Milestones	Due Date	Status	Comments
Establish and formalize project cost contingency to cover additional project detail such as unforeseen site conditions, interference, delays or other circumstances that would not have been known at initiation	1/18/2018	Completed	
Evaluate project design for unforeseen conditions that might arise or be discovered during the design process and whether these conditions fall within the original project scope	1/18/2018	Completed	
Relate contingency levels with recognized uncertainty and risks at specific levels of planning, design and construction	1/18/2018	Completed	
Determine whether contingency levels were appropriately evaluated and reviewed in each evolution of project estimating and each project stage	1/18/2018	Completed	
Review the project budgets and individual budget elements including management, design, construction and project specific contingencies	1/18/2018	Completed	

Cost Benefit Analysis:

Improving the project risk contingency levels and the application will lead to better allocation of the capital budget. The cost of the above-mentioned implemented actions are embedded in the cost to achieve improvements in our estimating process as noted in response to Recommendation 23 and is the following:

- Cost of three full time employees: $450,000 per year (2 positions are filled, one position remaining to be filled)
- Cost of Sage implementation project: $500,000 (one-time cost incurred July 2018); $130,000 (annual software and system maintenance cost).

Risk Analysis:

The lack of an effective contingency management process will inflate the costs of individual capital projects and will diminish the effectiveness of the overall capital program.

Customer Benefit Analysis:

Improving risk and contingency levels will allow PSEG Long Island to better prioritize capital investments which will ultimately improve the reliability of the electric system.

Feedback: PSEG Long Island uses a percentage of cost-based approach to estimate Risks and Contingencies (R&C) on capital projects. In July 2021, an independent consultant retained by LIPA found that the overall 20 percent R&C amount used throughout project construction stages appeared to be two to four times higher than R&C adjustments used by other utilities.

PSEG Long Island also underutilized existing estimating tools and does not use a formalized portfolio management system for tracking and storing information on capital projects as they progress.

The LIPA Board adopted capital budget recommendations and a PIP seeking to correct certain of these deficiencies.

In addition to completing PJDs before a capital project may be considered by the LIPA Board for inclusion in the consolidated budget, PSEG Long Island will also provide LIPA with periodic PJD updates highlighting, current cost estimates, including risk and contingency, schedule, and scope details as part of the annual budget process. Carryover projects must be identified by PSEG LI as part of the following year's capital budget adoption process. These changes have been included in the reformed contract that will be considered by the Board in December 2021. Several metrics related to PJDs, cost estimating, and construction have also been included in proposed 2022 performance metrics.

The Board-adopted PIP further establishes a Capital Budget Working Group to develop a policy to govern the inclusion of Risk and Contingency in a project's cost estimate.

Recommendation Number: 26 **Item Status** Revised

Recommendation:

Define and report project management performance measures that focus on the effectiveness of cost estimation, earned value and schedule management. Project progress reports should be timely, and contain all information which is pertinent for their target audience. Cost estimates and schedules developed for preliminary plans should be evaluated when a project is complete to determine where further enhancements to project estimating can be made.

• Have project managers actively monitor overall project progress against the baseline schedule and review cost versus progress and budget.
• Formalize project management performance reporting to LIPA and PSEG Long Island.
• Integrate cost and schedule systems with the project master schedule and the approved project budget.
• Develop a baseline schedule for every capital project showing the logical relationships, duration, and timing of the WBS elements for engineering and construction.
• Establish processes for systematic schedule preparation, review and analysis.
• Periodically, perform analyses of the initial establishment of operation/completion dates.
- Construction delivery strategy – whether plans were developed and defined for construction contracting and long lead item equipment procurement.
- Phasing requirements – determining the proper sequence and phasing of all proposed construction work on the project to ensure that construction was accomplished in the most economical manner while minimizing impact to operations.
- Integration of design, procurement and construction activities - once phasing was determined, whether all activities concerned with design, procurement, construction, start- up and operation, and the entire scope of work was clearly defined and integrated.
- Milestones – identification of important milestone dates establishing a basis for the implementation of the project work plan.

• Periodically reassess processes used to obtain actual project schedule data used to determine the status of the project against key milestones, and the accuracy of information on the progress of individual/critical project elements.
• Formalize processes to address proposed and actual revisions to the project schedule, and use of the scheduling system to identify possible solutions for schedule recovery.
• Highlight:
- Project cost variances
- Schedule variances
- Committed costs and actual costs to date
- Estimated cost at completion
- Capital budget impact
- Trends

- Pending and approved scope changes
- Earned value, or other measurements of cost and schedule performance.

Assigned LIPA Staff: Michael Simione, Director of Transmission and Distribution System Oversight

Assigned PSEG Staff Margaret Keane - Executive Sponsor; Anthony Stallone - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

Project progress reports should be timely and contain all information which is pertinent for their target audience. Cost estimates and schedules developed for preliminary plans should be evaluated when a project is complete to determine where further enhancements to project estimating can be made. PSEG Long Island will enhance its project management process to build upon its existing capabilities.

Deliverable: **Ranking:** High

The key steps of the work plan are as follows:
• Define project management performance measures, which highlight project cost variances, schedule variances, committed costs and actual costs to date, estimated cost at completion, capital budget impact, trends, pending and approved scope changes, earned value, or other measurements of cost and schedule performance.
• Evaluate reporting tools, source data and opportunities for integration.
• Develop reporting tool and performance measurement dashboard.
• Develop guidelines and/or procedures.
• Implement performance measurement for all capital projects and programs.
• Train applicable Project Management Office (PMO) and Projects& Construction personnel and key stakeholders.

Additionally, these deliverables will also address the 2013 Recommendations: 10.4.4, to define project management performance measures focusing on the effectiveness of cost estimation and scheduling. Cost estimates and schedules developed for preliminary plans should be evaluated when a project is complete to determine where further enhancements to project estimating can be made; 10.4.7, to develop a capital project cost forecasting/trending capability, 10.4.10, to improve periodic capital progress reporting; 10.4.12, to perform capital project schedule management.

PSEG Long Island will define project management performance measures that direct focus on the effectiveness of cost estimation, earned value and overall project performance, including schedule management and reporting.

• Cost estimates and schedules developed for preliminary plans should be evaluated when a project is complete to determine where further enhancements to project estimating can be made. (This also addresses the portion of the 2013 Recommendation 10.4.4, for cost estimates and schedules developed for preliminary plans should be evaluated when a project is complete to determine where further enhancements to

project estimating can be made).
• The implementation of measures to verify the accuracy of estimates versus the actual project cost and maintain a record of updates to the estimating database is in progress.
• Material cost is being monitored against historical cost and the estimating database is being updated (part of the current estimating process).
• Contractor cost monitoring is improving and internal labor cost validation is still in progress.
• Formalize project management performance reporting to LIPA and PSEG Long Island. (Addresses the portion of the 2013 Recommendation 10.4.4- to define project management performance measures focusing on the effectiveness of cost estimation, scheduling; 2013 Recommendation 10.4.7- to develop a capital project cost forecasting/trending capability; and 10.4.10- to improve periodic capital progress reporting.)
• PSEG Long Island has implemented tier II LIPA reporting metrics for Capital Project management. These include individual metrics for budget forecast accuracy and schedule accuracy based on scheduled milestones achieved.
• In 2018, an additional metric has been added to track and measure estimate accuracy.
• Integrate cost and schedule systems with the project master schedule and the approved project budget.
• PSEG Long Island currently uses SAP for cost management, SAGE for estimating and Primavera P6 for scheduling. Evaluate and determine the feasibility of software capabilities of automating the integration of cost, estimating and schedule systems.
• Develop a baseline schedule for every capital project showing the logical relationships, duration, and timing of the WBS elements for engineering and construction.
• Effective in 2018 major capital projects have a well-defined baseline schedule showing the logical relationships, duration, and timing of the WBS elements for engineering and construction.
• PSEG Long Island established processes for systematic schedule preparation, review and analysis.
• Establish processes for systematic schedule preparation, review and analysis. (Addresses the portion of the 2013 Recommendation 10.4.12- to perform capital project schedule management.)
• Project schedules are created in Oracle P6 software using a standard WBS template and are updated as needed with each revision archived as a pdf.
• Formalize processes to address proposed and actual revisions to the project schedule, and use of the scheduling system to identify possible solutions for schedule recovery.
• PSEG Long Island has in place Oracle P6 Scheduling Software for schedule management. Project schedules and associated activities are updated monthly in Oracle P6 scheduling software to determine activity status, percent completed, actual man-hours, schedule recovery and activity closeout. These schedules are archived to the project folder.

Deliverables/Milestones	Due Date	Status	Comments
PSEG Long Island has in place Oracle P6 Scheduling Software for schedule management. Project schedules and associated activities are updated monthly in Oracle P6 scheduling software to determine activity status.	6/1/2018	Completed	

Effective in 2018 major capital projects have a well-defined baseline schedule showing the logical relationships, duration, and timing of the WBS elements for engineering and construction. PSEG Long Island established processes.	6/1/2018	Completed	
Material cost monitored against historical cost and the estimating database updated.	9/1/2018	Completed	
Implement tier II LIPA reporting metrics for Capital Project management, including individual metrics for budget forecast accuracy and schedule accuracy based on scheduled milestones achieved.	9/1/2018	Completed	
Add tier II LIPA reporting metric for Capital Project management to track and measure estimate accuracy.	12/31/2018	Completed	
Evaluate improved reporting tools, source data and opportunities for integration.	8/1/2019	Completed	
Define/enhance project management performance measures by reviewing existing Tier II metrics	8/1/2019	Completed	
Develop improved guidelines and/or procedures.	8/30/2019	Completed	
Contractor cost monitoring is improving and internal labor cost validation is still in progress.	9/1/2019	Completed	
Train applicable PMO and Projects & Construction personnel and key stakeholders.	9/30/2019	Completed	
Implement performance measurement for all capital projects and programs.	10/25/2019	Completed	
Evaluate and determine the feasibility of software capabilities of automating the integration of cost and schedule systems.	12/31/2019	Completed	
Determine effectiveness, conduct lessons learned and identify corrective measures.	12/31/2019	Completed	

Cost Benefit Analysis:

New and enhanced performance measurement measures will result in additional activities and potentially require additional software and systems. As the detailed implementation plans are being developed, it is premature to estimate the cost to achieve.

Benefits: Implementing new and enhanced performance measurement measures will result in the more effective use of capital and increased project management performance and measurement, including:

- Enhanced project scheduling and execution
- Improved estimating tools
- Identification and implementation of best-practices and lessons learned thereby improving performance
- Better project management and oversight
- Improved collaboration of team members
- Better project cost and schedule control
- Better risk management
- Improved standardized reporting capabilities for project team and utility management

Risk Analysis:
Lack of performance measurement will reduce control of capital budget resources and will degrade project management performance.

Customer Benefit Analysis:
Performance measurement will provide better control and use of capital budgets and will improve project management performance resulting in the benefits noted above.

Feedback: For PSEG Long Island to complete the objectives of Recommendation No. 26, it will be necessary for it to address the issues identified in related recommendations, as outlined in comments regarding Recommendations 13, 25, 27 and 28.

Implementation of the LIPA Capital Budget recommendations outlined above in Recommendation No. 25 will be necessary to meaningfully achieve the reporting objectives of this recommendation. Therefore, implementation of this recommendation remains in progress for the same reasons described above and below in Recommendation No. 28.

Recommendation Number: 27 **Item Status** In Progress

Recommendation:

Develop an integrated a work management system covering all PSEG Long Island operations, maintenance and construction resources that are based on engineered time standards and cover routine operations, repetitive maintenance activities, planned work, support requirements, and provide continuous feedback on workforce effectiveness. The system should be in an easy-to-use format expressed in man-hours, along with the combined employee and contractor capacity available to perform the work, supported by real time reporting of capacity utilization. The system should include:
•Documentation of work level versus resource histogram development and work plan process.
•Enhanced methods to calculate workforce capacity and utilization.
•Expanded workforce coverage in reports.
•Documentation of processes for establishing workforce levels.
•Documentation of criteria for adding contractor capacity.
•Establish real time variance reporting for O&M and project costs.
•Additional decision-making information to work plan.

Assigned LIPA Staff: Michael Simione, Director of Transmission and Distribution System Oversight

Assigned PSEG Staff Michael Sullivan - Executive Sponsor; Joseph Cicalo - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

This implementation plan covers recommendations #27 and #28 and is identical to the plan for #28.

PSEG Long Island will identify and document existing and future management information/reporting and work management processes/systems, including potential near term and longer term enhancements. The overall objective is to achieve cost-effective improvements in efficiency. Our assumption is that efficiency improvements will allow us to complete required work at an overall reduced cost.

Deliverable: **Ranking:** High

Three stages of enhancements (short-term, mid-term and long-term) will be provided to three key areas:
-Information and reports
-Processes and
-Systems

Currently PSEG Long Island utilizes CMMS for managing assets, Primavera (P6) for scheduling, SAP work management and SAP financials for costs and SAGE for estimating. We will review the current use of these systems and look for enhancements that will improve overall efficiency within the business. Key deliverable components include time (productivity) standards, organizational effectiveness measures and

capacity analysis (visibility to desired work vs. available resources). Additionally, deliverables will provide insight into the drivers of inefficiency.

Enhancements in visibility and reporting will occur in the following areas:
- Employee planned availability vs. actual availability
- Contractor planned availability vs. actual availability
- Work level vs. resource histograms
- Capacity utilization reporting
- Workforce effectiveness measures
- Workload level trending
- Unit cost reporting
- Timely GIS updates of fixed asset records
- Electronic completion records
- Electronic inspection records

Document formal work management practices for:
- Scheduling
- Prioritization and planning
- Resource allocation and leveling
- Performance measurement
- Budget planning and control
- Vendor tracking
- Document/drawing control
- Pertinent records management

This action plan addresses item #27 and #28, as well as 2013 audit items 13.4.1 and 13.4.2.

Deliverables/Milestones	Due Date	Status	Comments
Identify and document existing management information, work management processes, and work management systems, and future required management information.	1/1/2019	Completed	
Identify mid-term enhancements that can be implemented by 7/1/2020 and prepare of list of targeted enhancements. Create a milestone schedule for implementation. Cost benefit analysis to be provided.	7/1/2019	Completed	
Implement short-term enhancements by 7/1/2019 and prepare summary of changes implemented.	7/1/2019	Completed	
Identify long term enhancements that can be implemented by 7/1/2021 and prepare a list of targeted enhancements. Create a milestone schedule for implementation. Cost benefit analysis to be provided.	7/1/2020	Completed	
Implement mid-term enhancements by 7/1/2020 and summarize implemented enhancements.	7/1/2020	Completed	Completed
Implement long term enhancements by 7/1/2021 and summarize implemented enhancements.	7/1/2021	Completed	

Cost Benefit Analysis:

The cost to develop and implement an integrated work management system will be significant. Expenditures of the magnitude of $20,000,000 could be required. Given the large capital and O&M expenditures in the company, small improvements in efficiency can quickly pay back investments of this magnitude and greater.

Actual cost and benefit amounts will be developed for individual components of the proposed solutions and will guide approvals and implementations.

Risk Analysis:
Risk will be mitigated by striking the correct balance between too little or too much work management focus. Under delivery will not achieve optimal benefits. Over delivery will not optimize the cost of overall efforts.

Customer Benefit Analysis:
Improved efficiency will result in the required work occurring at lowest reasonable cost, thereby mitigating billing impacts to the customer. Additionally, enhanced work management information will allow for better scheduling and communication of customer driven work.

A detailed Cost Benefit Analysis will be provided when investment decisions are made for each of the short, medium, and long-term enhancements described above.

Feedback: Implementation of Recommendation No. 27 is in progress. LIPA staff recommended and the LIPA Board of Trustees has adopted a series of specific initiatives to produce benefits for LIPA customers in the areas of productivity, efficient deployment of capital, improved customer satisfaction and better execution of high priority work, among others.

At present, the Work Management PIP remains in development. Initiatives will include:

(1) Creating business processes and work practices so that all asset-related work is orchestrated, managed,executed, and controlled using the EAMS system referenced at Recommendation No. 18 above.

(2) Improve the accuracy of estimating via a consistent process and use of reusable planning artifacts with standard times (i.e., Compatible Unit Estimates (CUE) and task lists) for all work types.

(3) Improve the use of mobile devices and ergonomic transaction design to enhance field management of work and data to be integrated into the new EAMS system.

(4) Improve high-level scheduling and yard-level short-term work-week scheduling and dispatch.

(5) Improve Key Performance Indicators/metric definitions and status reporting dashboards for work management visibility and performance improvement.

(6) Clarify, rationalize, and implement standardized work management processes and PSEG Long Island work management positions (e.g., planner, scheduler, work coordinator, router) and across yards.

(7) Develop key principles for work prioritization.

(8) Develop key principles for work prioritization and scheduling and rescheduling, including a clear process decision rights for developing an annual schedule as well as adjusting the schedule.

LIPA has proposed several performance metrics for 2022 that address each of the Work Management recommendations.

Recommendation Number: 28 **Item Status** In Progress

Recommendation:

Fill gaps in the current management information reporting and organizational reporting relationships to support an integrated work management system.
•Develop formal reports on trends in work load levels, workforce productivity and utilization. The analysis of these trends identifies areas that are performing well, where improvements are needed, and is a foundation for the development of strategies to improve work force performance.
•Establish formal processes to use work management data for annual resource planning as part of the annual business planning activities of PSEG Long Island operations and maintenance.
•Develop formal work management practices for PSEG Long Island engineering and design functions. The work management systems should have appropriate system tools to support the various individual and distinct engineering functional processes. Elements that should be formalized include:
-Scheduling
-Prioritization and planning
-Resource allocation and leveling
-Performance measurement
-Budget planning and control
-Vendor tracking
-Document/drawing control
-Records management
-Procurement management
-Time reporting

Assigned LIPA Staff: Donald J. Schaaf, Senior Manager of Emergency Response Oversight

Assigned PSEG Staff Michael Sullivan - Executive Sponsor; Joseph Cicalo - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

The Implementation Plan for Recommendation 27 also addresses Recommendation 28.

Deliverable: **Ranking:** High

See Recommendation 27.

Cost Benefit Analysis:

See Recommendation 27.

Feedback: In order to fill the information reporting and organizational gaps referenced in this audit recommendation, PSEG Long Island must implement work management processes outlined above in comments to Recommendation No. 27. Pending completion of all deliverables in the Work Management PIP, as well as verification by LIPA, implementation of Recommendation No. 28 remains In Progress.

Recommendation Number: 29 **Item Status** In Progress

Recommendation:

Develop overtime targets for PSEG Long Island operations and maintenance organizations based on economic analyses and verified industry norms.

Assigned LIPA Staff: Donald J. Schaaf, Senior Manager of Emergency Response Oversight

Assigned PSEG Staff Michael Sullivan - Executive Sponsor; Joseph Cicalo - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

The objective of this initiative is to establish overtime targets with a basis from economic analysis and industry norms. Our assumption is that establishing overtime targets in this fashion will yield optimal cost benefit from the overtime hours worked.

Deliverable: **Ranking:** Moderate

Deliverables are:

•Benchmark information on overtime levels.
•Financial analysis indicating optimal levels of overtime from a financial perspective.
•Proposed overtime level targets including when such targets should be effective.

Deliverables/Milestones	Due Date	Status	Comments
Establish team to review PSEG Long Island overtime rates and perform market research.	1/31/2019	Completed	
Identify industry norms for overtime rates through comparison of industry peers.	4/30/2019	Completed	
Perform cost/benefit analysis of adjusting workforce to adjust overtime rates.	6/30/2019	Completed	
Identify and develop appropriate target.	7/15/2019	Completed	
Establish the target and create an implementation schedule	8/31/2019	Completed	
Implement Schedule	12/31/2019	Completed	

Cost Benefit Analysis:
The cost to make recommendations from financial modeling and industry modeling is estimated at $250,000. Given the large amounts of overtime expended, as well as the large labor pool at PSEG Long Island, we expect that benefits will offset costs.

Risk Analysis:
The risk of not optimizing overtime is a risk of not realizing potential cost reductions.

Customer Benefit Analysis:
The customer will benefit from optimized overtime costs.

Feedback: The 2018 Management Audit recommended that PSEG Long Island develop workforce overtime targets to "yield optimal cost benefit from the overtime hours worked." PSEG Long Island has since developed specific OT targets (excluding storm OT) to manage T&D personnel hours in the areas of:

(1) Overhead and underground line repair and maintenance

(2) Electric distribution operation.

(3) Substation and relay maintenance.

LIPA continues to review target improvements and processes developed by PSEG Long Island. Efforts to reduce OT include a performance metric proposed for 2022. Pending LIPA's IV&V, implementation of Recommendation No. 29 remains In Progress.

Recommendation Number: 30 **Item Status** Completed

Recommendation:

Add KPIs for management positions. Review the design of monitoring and controlling reports to improve their usefulness.

Assigned LIPA Staff: Barbara Ann Dillon, Esq., PHR, Director of Human Resources & Administration

Assigned PSEG Staff Michael Sullivan - Executive Sponsor; Nicholas Nolau - Team Leader

LIPA Executive: Bobbi OConnor, Chief Administrative Officer & Board Secretary

Objectives and Assumptions of the Recommendation:

A KPI (Key Performance Indicator) is a measurable value that demonstrates how effectively the utility is achieving key business objectives. Organizations use KPIs at multiple levels to evaluate their success at reaching targets.

Our objective is to cost effectively establish the right mix of KPIs and associated reporting within PSEG Long Island.

Deliverable: **Ranking:** Low

- A list of which positions will have KPIs, and the KPIs for those positions
- A list of which positions will not have KPIs with the accompanying rationale
- A list of what level of reporting will exist for positions with KPIs
- Implemented reporting in accordance with deliverable due 9/30/19 (review existing KPIs and existing job descriptions.)

Deliverables/Milestones	Due Date	Status	Comments
Review existing reporting capabilities and identify reporting that can support KPI reporting at manager and supervisor levels	1/1/2019	Completed	Reviewed current T&D tier 1 and 2 goals and re capabilities. Identified potential level for casca scorecard measures to supervision/management
Identify and list all management positions. Indicate any that already have KPIs	1/1/2019	Completed	Listed all MAST positions and reviewed sample MAST positions for KPIs in current requisition.
Review existing KPIs and existing job descriptions and identify which job descriptions will receive new KPIs and which job descriptions will receive KPI level reporting	9/30/2019	Completed	
List those management positions that KPIs were not added to and an explanation why they were not included for those roles (summary)	10/1/2019	Completed	
Add KPIs to job description, communicate to impacted employees and begin KPI level reporting	10/1/2019	Completed	

Cost Benefit Analysis:
Establishment of KPIs for appropriate positions will have nominal/minimal cost. PSEG Long Island will review reporting enhancements, which could have significant cost, and determine the appropriate level of reporting based on expected cost/benefit.

Risk Analysis:
Not implementing the appropriate level of KPIs will result in less than optimal performance and results.

Customer Benefit Analysis:
Implementation of this recommendation will result in the following benefits: Improved performance, potential improvements in employee morale associated with increased communication.

Feedback: N/A.

Recommendation Number: 31 **Item Status** Completed

Recommendation:

At the time of the next bill redesign, revise bill formats to include missing information required by 16 NYCRR Parts 11 and 13 (e.g., definition of kW, late payment date line and an explanation as to how the bill can be paid).

Assigned LIPA Staff: Carolyn MacKool, Director of Customer Experience Oversight

Assigned PSEG Staff Richard Walden - Executive Sponsor; Brigitte Wynn - Team Leader

LIPA Executive: Mujib Lodhi, Chief Information Officer and Senior VP of Customer Experience

Objectives and Assumptions of the Recommendation:

A review of the customer bill revealed three missing data points that are required by NYCRR Parts 11 and 13.

• Late payment line and date to be added to TOU (MRP1) bills
• kW definition to be added to definition section
• New bill message by customer service center area will be added and appear on each bill identifying the customer center in the customers area

Deliverable: **Ranking:** Low

The recommendations for three items to be added to the bill have been reviewed and have been placed into the Customer Accounting System (CAS) Continuous Improvement Project to be completed in 4Q 2018. These are not complex changes.

Deliverables/Milestones	Due Date	Status	Comments
Bill Changes Reviewed / Scheduled	7/20/2018	Completed	
Development	11/15/2018	Completed	
User Acceptance Testing	11/21/2018	Completed	
Sign Off	11/28/2018	Completed	
Go Live Production	11/30/2018	Completed	

Cost Benefit Analysis:

The cost of enhancements is $75,000. There are no direct cost benefits; however, including this new information on customer bills will ensure compliance with HEFPA.

Risk Analysis:
The project is dependent on the timely completion of the annual rate change as both projects will utilize the same technical resources and bill print modules.

Customer Benefit Analysis:
N/A

Feedback: N/A.

Recommendation Number: 32 **Item Status** Completed

Recommendation:

Issue denial of service notices as required by 16 NYCRR Parts 11 and 13. Offer payment arrangements as required by Part 11.

Assigned LIPA Staff: Carolyn MacKool, Director of Customer Experience Oversight

Assigned PSEG Staff Richard Walden - Executive Sponsor; Brigitte Wynn - Team Leader

LIPA Executive: Mujib Lodhi, Chief Information Officer and Senior VP of Customer Experience

Objectives and Assumptions of the Recommendation:

The objective of this recommendation is to ensure that PSEG Long Island is consistently offering payment agreement plans, in writing, to applicants owing money on previous accounts in the Denial of Service notice procedure as HEFPA requires. Issue a "Denial of Service" to applicants in situations when they are told that they must go to the office and provide additional information.

Deliverable: **Ranking:** Low

HEFPA section 11.3(b) requires that customers be given a written notice when their application for service is denied.

The notification must state the reason(s) for the denial, what the applicant must do to qualify for service and the customer's right to appeal to DPS.

PSEG Long Island's project team created a procedure requiring that a "denial of service" notification be sent to every customer that is "denied" service.

Deliverables/Milestones	Due Date	Status	Comments
Project team established.	7/10/2018	Completed	
Project team reviewed PSEG Long Island current Denial of Service notice as well as notices used by other utilities (Con Ed and National Grid).	7/13/2018	Completed	
New Denial of Service notice, that includes payment plan information, was drafted by the project team and sent to Marketing for formatting and branding.	7/27/2018	Completed	
Draft of Denial of Service Notice and process document were sent to Legal for review.	8/3/2018	Completed	
Project team drafted a process document for the Denial of Service notices for representatives to follow.	8/4/2018	Completed	
Updated Denial of Service Notice and process implemented.	8/8/2018	Completed	

Cost Benefit Analysis:
There are no direct cost benefits. Implementation of this recommendation is required to comply with HEFPA.

Risk Analysis:
None

Customer Benefit Analysis:

Customers will benefit from the implementation of this recommendation as documenting the payment agreement option on the notice will more clearly define all options available to the customer in support of their application for service.

Feedback: N/A.

Recommendation Number: 33 **Item Status** Completed

Recommendation:

Revise the processes used by PSEG Long Island to respond to complaints received by the Department of Public Service (DPS) as follows:

- Create a case file checklist to include in case files to ensure documentation is complete.
- Develop an integrated program management approach to ensure customers are provided information on all programs available to them. One approach would be to create customer profile worksheet with cross reference to applicable programs and/or relevant protections.
- Eliminate practice of hand calculations and implement use of excel template calculators. Modify the "DPS Complaint Response Form" to include:
  - Time and date customer complaint was created
  - Applicable customer contact timeline (e.g. 2-hour, next day etc.)
  - Time and date customer was contacted
  - Any special protections or customer assistance programs the customer was referred to
  - Date form submitted to DPS.
- Implement a process to ensure PSEG Long Island includes copies of the DPS customer close out letters in the case files.

Assigned LIPA Staff: Carolyn MacKool, Director of Customer Experience Oversight

Assigned PSEG Staff Richard Walden - Executive Sponsor; Brigitte Wynn - Team Leader

LIPA Executive: Mujib Lodhi, Chief Information Officer and Senior VP of Customer Experience

Objectives and Assumptions of the Recommendation:

The objective of this recommendation is to improve the process for documenting and resolving customer complaints that are reported to the DPS.

Deliverable: **Ranking:** Low

To implement this work plan, subject matter experts from the PSEG Long Island Customer Relations team and Quality Assurance teams will work together to review the audit recommendation and develop an action plan to ensure that it is implemented in a timely manner. The action plan will be reviewed by the Director of the Customer Experience for accuracy and thoroughness prior to implementation.

Hand calculations are only the notes taken in the field. Excel calculators are then used to work up the final figures.

Deliverables/Milestones	Due Date	Status	Comments
Establish project team	7/9/2018	Completed	
Review audit finding and develop version 1 of action plan	7/12/2018	Completed	
Modify “DPS Complaint Response Form” to include new data fields as requested in audit recommendation	7/16/2018	Completed	
Create case file checklist	7/16/2018	Completed	
Finalize action plan (i.e. action plan is completely defined)	7/29/2018	Completed	Step reworded to clarify action item
Train Customer Relations team on new case file checklist, modified DPS complaint response form, and close out letters (where applicable)	7/29/2018	Completed	
DPS close out letters	8/21/2018	Completed	July 30, 2019 Update: This step is no longer applicable.
Create customer profile worksheet	8/21/2018	Completed	
Create file checklist	8/21/2018	Completed	
Create excel spreadsheet template to calculate billing adjustments where applicable	10/29/2018	Completed	The Customer Relations team has been trained c required documentation for all calculations.
Train Customer Relations team on all required documentation for all calculations	10/29/2018	Completed	The excel spreadsheets were created and implen

Cost Benefit Analysis:

There are no additional costs. Implementation of this recommendation is required to comply with DPS regulations.

Risk Analysis:
None.

Customer Benefit Analysis:
Customers will benefit from the implementation of this recommendation as follows:

- More consistent application of the issue resolution process (resulting from the implementation of checklists for each case file to ensure thorough documentation of the process).
- Possibly access to more programs, protections, and options (resulting from the implementation of a cross-reference worksheet).
- Better case documentation throughout the process should there be a need to refer back to the customer file as a result of an escalated complaint or future inquiry on the same case.

Feedback: N/A.

Recommendation Number: 34 **Item Status** Completed

Recommendation:

Modify the CTS system to improve DPS complaint tracking and reporting ability. Add data fields including:

- The original source of complaints referred by DPS (i.e., direct from customer, Consultant, Government Official/Executive Correspondence).
- Customer contact deadline.
- Closeout deadline.
- Resolution status field to differentiate between cases that are "Resolved and Closed" vs "Unresolved and Closed"
- Indication the case is "Pending completion of future work" to allow for active follow-up.
- Modify the Date Opened field to allow for capturing of time of day a case is created.
- Modify Date Contacted field (default time of day set at 0:00) to force user to adjust time. Adjust internal processes to ensure data entry into this field.

Assigned LIPA Staff: Carolyn MacKool, Director of Customer Experience Oversight

Assigned PSEG Staff Richard Walden - Executive Sponsor; Brigitte Wynn - Team Leader

LIPA Executive: Mujib Lodhi, Chief Information Officer and Senior VP of Customer Experience

Objectives and Assumptions of the Recommendation:

The objective of this recommendation is to ensure that the Complaint Tracking System (CTS), used by the Customer Relations team to document and work customer complaints reported to the DPS, has the functionality needed for optimal work flow and reporting.

Deliverable: **Ranking:** Moderate

To implement this work plan, subject matter experts from the PSEG Long Island Customer Relations team, Information Technology team, and Quality Assurance teams will work together to review the audit recommendation and develop an action plan to ensure that it is implemented in a timely manner. The action plan will be reviewed by the Director of the Customer Experience team for accuracy and thoroughness prior to implementation.

The work plan was completed on 9/28/2018.

Deliverables/Milestones	Due Date	Status	Comments
Establish project team	7/9/2018	Completed	
Review audit finding and develop version 1 of IT requirements	7/12/2018	Completed	
Review IT requirements for additional clarity and refinement	7/16/2018	Completed	
Get delivery date from IT team	8/1/2018	Completed	
Begin IT work	8/13/2018	Completed	

End IT work	9/14/2018	Completed	
Test IT changes made to CTS	9/21/2018	Completed	
Complete action plan (i.e. recommendation fully implemented)	9/28/2018	Completed	
Reserved time for IT rework and retesting (if needed)	9/28/2018	Completed	

Cost Benefit Analysis:

The cost of enhancements is $6,500. There are no direct cost benefits. Implementation of this recommendation will improve compliance with with DPS regulations.

Risk Analysis:
None

Customer Benefit Analysis:
Customers will benefit from better case documentation throughout the process should there be a need to refer back to the customer file as a result of an escalated complaint or future inquiry on the same case.

Feedback: N/A.

Recommendation Number: 35 **Item Status** Completed

Recommendation:

Implement a Quality Assurance Program in Customer Relations. Recommended items for review include:

- Data is entered in CTS
- CAS diary entry includes the time customer contact occurred
- Case files are completed
- Appropriate tools and methodology are being used to calculate adjustments
- Consistent treatment of customers with similar issues
- Customers complaint concerns appropriately addressed
- DPS Complaint Response Form is used to track response to DPS cases.

Assigned LIPA Staff: Carolyn MacKool, Director of Customer Experience Oversight

Assigned PSEG Staff Richard Walden - Executive Sponsor; Brigitte Wynn - Team Leader

LIPA Executive: Mujib Lodhi, Chief Information Officer and Senior VP of Customer Experience

Objectives and Assumptions of the Recommendation:

The objective of this recommendation is to ensure that the processes for documenting and resolving customer complaints that are reported to the DPS are being followed and executed consistently across the Customer Relations Department.

Deliverable: **Ranking:** Low

To implement this work plan, subject matter experts from the PSEG Long Island Customer Relations team and Quality Assurance teams will work together to review the audit recommendation and develop an action plan to ensure that it is implemented in a timely manner. The action plan will be reviewed by the Director of the Customer Experience team for accuracy and thoroughness prior to implementation.

The work plan was completed on 8/22/2018.

Deliverables/Milestones	Due Date	Status	Comments
Establish project team	7/9/2018	Completed	
Review audit finding and develop version 1 of action plan	7/12/2018	Completed	
Identify QA resource to begin monthly QA audit process	7/16/2018	Completed	
Develop QA checklist	7/16/2018	Completed	
Select files to be audited	7/18/2018	Completed	
Conduct QA audit to include all items in the "recommended items for review" list	7/20/2018	Completed	
Prepare QA audit report	7/24/2018	Completed	
Finalize implementation of action plan (i.e. action plan is completely implemented)	7/29/2018	Completed	
Implement Quality Assurance program in Customer Relations	8/22/2018	Completed	

Cost Benefit Analysis:

There are no direct cost benefits. Implementation of this recommendation is required to comply with DPS regulations.

Risk Analysis:
None

Customer Benefit Analysis:
Customers will benefit from the implementation of this recommendation as follows:

- Better case documentation throughout the process should there be a need to refer back to the customer file as a result of an escalated complaint or future inquiry on the same case.
- Opportunities for additional training of Customer Relations personnel should the Quality Assurance process identify inconsistencies in the issue resolution process.

Feedback: N/A.

Recommendation Number: 36 **Item Status** In Progress

Recommendation:

Measure the effectiveness of capital-project outreach, media relations and external affairs programs, to determine whether outreach efforts are cost-efficient, on target, and achieving results. Potential measurement options include surveys, focus groups, a media clip index, or attendance at public meetings.

Assigned LIPA Staff: Tom Locascio, Director of External Affairs,
Gaspare Tumminello, Manager of External Affairs

Assigned PSEG Staff Christopher Hahn - Executive

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

The objective of measuring outreach, media relations, and our external affairs programs is to enhance timely and accurate communications to our customers and stakeholders. PSEG Long Island monitors the effectiveness of our communications efforts through a range of indicators, including but not limited to customer and government official feedback; customer satisfaction as measured through the JD Power survey; ongoing monitoring of media coverage and maintenance of a media clip index; ongoing monitoring and tracking of media sentiment; customer focus groups and interviews on targeted subjects including infrastructure communications; and review of formal complaints to the Department of Public Service.

To more regularly measure the effectiveness and cost-effectiveness of our capital project and external affairs communications efforts, PSEG Long Island seeks to implement a recurring, targeted set of measurement tools that will be folded into a scorecard that evaluates whether outreach efforts are cost-efficient, on target, and achieving results. These recurring targeted measurements will enable the external affairs and communications teams to gauge the effectiveness of ongoing improvements in our communications to our customers. The scorecard will be based on discussions with key external affairs stakeholders and will be implemented after a pilot period to allow for learning and confirmation of effectiveness of measurement tools.

Deliverable: **Ranking:** Low

A team of PSEG Long Island External Affairs staff will identify a set of stakeholders in the capital project outreach process. These stakeholders will be comprised of internal and external representatives, and may include state and local elected officials or their

designees; New York State agencies and/or authorities; customers; other utilities, and PSEG Long Island staff from a range of business areas. The External Affairs team will garner feedback about how stakeholders describe a successful outreach campaign and seek recommendations about how to measure outreach success and cost effectiveness.

Based upon feedback gathered through the interviewing process, External Affairs will develop and pilot an Outreach Scorecard measuring the performance of outreach campaigns on the selected metrics. After a six-month pilot, the External Affairs team will review the effectiveness of the pilot scorecard. The team will improve upon scorecard metrics based upon lessons learned during the pilot.

Deliverables/Milestones	Due Date	Status	Comments
Meet with stakeholders to gather input into outreach goals and potential measures of outreach effectiveness	3/15/2019	Completed	
Develop a template scorecard containing metrics on outreach effectiveness, cost-efficiency, and appropriateness of outreach targeting	6/15/2019	Completed	
Implement outreach scorecard for a six-month pilot period commencing June 2019 and ending December 2019	12/15/2019	Completed	
Finalize public outreach scorecard based on findings from pilot period, summarize pilot findings	3/15/2020	In Progress	See Feedback comment below.

Cost Benefit Analysis:

The project will be fully implemented using in-house labor. Implementation is anticipated to take 300 hours to develop both tools at a cost of $118 per hour, for a total of approximately $35,400. No direct cost benefits are associated with this initiative. Customers will ultimately benefit through improvements in project communications and outreach.

Feedback: PSEG LI issued surveys and reported this recommendation as complete. However, as of July 27, 2021, PSEG Long Island External Affairs relayed that no outreach survey responses have been completed by customers to date. Since no survey responses have been logged, there remain no findings to evaluate, and no ability to evaluate the effectiveness of the proposed survey to finalize the outreach survey period.

Therefore, the implementation status for Recommendation 36 is In Progress pending marketing of the survey to customers to obtain responses and evaluation of responses. LIPA has proposed a performance metric for 2022 to address this recommendation.

Recommendation Number: 37 **Item Status** Completed

Recommendation:

On a pilot basis, evaluate the potential use and effectiveness of text messages and phone calls to customers on scheduled tree trim routes.

Assigned LIPA Staff: Tom Locascio, Director of External Affairs, Gaspare Tumminello, Manager of External Affairs

Assigned PSEG Staff Michael Sullivan - Executive Sponsor; Mark Cerqueira - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

Our objective is to determine the value of text and phone based customer notifications for scheduled tree trimming.

Deliverable: **Ranking:** Low

A pilot program that quantifies cost and benefits and recommends future use of this option for customer notification.

Deliverables/Milestones	Due Date	Status	Comments
Set up a process for text notifications	1/29/2019	Completed	
Manage the process for a period of time and evaluate the pros and cons.	7/31/2019	Completed	
Make decision for future implementation.	9/1/2019	Completed	

Cost Benefit Analysis:

Cost of the pilot is nominal / minimal. Cost and benefit of full deployment will be determined via the pilot.

Risk Analysis:
Risk of this pilot is nominal / minimal.

Customer Benefit Analysis:
The customer will benefit from improved communication.

Feedback: N/A.

Recommendation Number: 38 **Item Status** Completed

Recommendation:

Measure the effectiveness of energy efficiency and low-income programs, and outreach and marketing efforts.

Assigned LIPA Staff: Jen Hayen, Director of Communications

Assigned PSEG Staff Richard Walden - Executive Sponsor; Michelle Somers - Team Leader

LIPA Executive: Justin Bell, Vice President of Public Policy and Regulatory Affairs

Objectives and Assumptions of the Recommendation:

The purpose of the action plan is to (1) measure the effectiveness of low income program communications and outreach amongst PSEG Long Island's low-income population, and (2) to leverage learnings to improve the outreach effort.

The objective of the plan is to increase low-income customer's awareness and understanding of applicable low-income programs.

Deliverable: **Ranking:** Low

The plan will be implemented through collaboration between various areas and subject matter experts (SMEs) that touch our low-income customer base. The team will work to identify target populations of eligible program participants and deploy a baseline survey to prospects. A bi-annual survey will be conducted to measure impact and effectiveness of communication efforts.

Metrics:
In order to measure the effectiveness of the proposed 2019 communication effort to raise low-income customer awareness of our energy efficiency and low income programs, the following metric and milestones are being developed/tracked:

1.Baseline awareness survey – this survey will be conducted among a sample population of the low-income customer base to determine a baseline target of customer awareness of our programs. The survey will ask customers about their awareness of these programs, how they consume information from their utility and through what communication channels.
Milestone: initial survey results – 10/29/2018

2.Mid-year awareness survey – this survey will take place after communications have been in market over the first half of 2019 to measure changes/improvements to the baseline awareness metric. The goal at the mid-year survey will be to increase awareness by 5% over the baseline target.
Milestone: 7/08/2019

3.Year-end awareness survey – this checkpoint survey will again measure changes / improvements in low-income customer awareness versus the baseline survey. The goal

at the year-end survey will be to increase awareness by 10% over the baseline target.
Milestone: 11/08/2019

Deliverables/Milestones	Due Date	Status	Comments
Establish project team, hold kick-off meeting	8/2/2018	Completed	
Develop program-eligible customer prospect profiles	8/24/2018	Completed	
Cross reference profiles with existing one million customer database & 3rd party data to identify eligible program participants	9/24/2018	Completed	
Identify best low income customer communications channels	10/29/2018	Completed	
Develop and execute baseline awareness study – report findings	11/9/2018	Completed	
Create communications plan based on survey feedback, channel selection and target populations	11/30/2018	Completed	
Communications collateral & material development	12/21/2018	Completed	
Begin communication plan execution	1/14/2019	Completed	
Develop, execute mid-year awareness evaluation survey, report findings	7/8/2019	Completed	
Develop, execute year end awareness evaluation survey, report findings	11/8/2019	Completed	
Develop and modify annual communication plan as necessary, evaluation survey, report findings	11/29/2019	Completed	

Cost Benefit Analysis:

Better/more effectively targeted marketing efforts could reduce the costs of the current marketing activities. Increased market penetration and understanding of saturation levels could potentially lead to higher program participation. Better recall of PSEG Long Island's marketing efforts could increase customer satisfaction and raise JD Power scores.

Risk Analysis:
None

Customer Benefit Analysis:
Raising awareness of our low income programs would allow qualifying customers to take advantage of programs that could help them lower their energy costs.

Feedback: N/A.

Recommendation Number: 39 **Item Status** Completed

Recommendation:

Develop a more formalized process for determining the outreach budgets for capital projects, particularly Tier 3 and high scoring Tier 2 projects

Assigned LIPA Staff: Tom Locascio, Director of External Affairs

Assigned PSEG Staff Christopher Hahn - Executive Sponsor; Lauren Hill - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

Accurate estimating of capital expenditures can facilitate better planning of capital investments. Major capital projects that are complex in nature may generate concern in the communities they will be located, and as such, require a greater outreach effort. Extensive outreach campaigns tend to be more costly in both labor and non-labor expenses. PSEG Long Island's current practice is to estimate labor hours associated with planned capital projects. PSEG Long Island has not in the past developed detailed estimates of non-labor expenses associated with outreach for planned capital projects. Developing and implementing a process to estimate the full cost of outreach for major capital projects will improve the overall accuracy of project cost estimates.

Deliverable: **Ranking:** Low

In-house resources from the PSEG Long Island External Affairs and Estimating & Permitting departments will partner to expand upon existing project estimating processes. The project team will develop an Outreach Cost Matrix that estimates costs for resources frequently used during capital project outreach, including labor and non-labor resources. Project outreach budgets will be established for each construction project using the Outreach Cost Matrix that will be updated at estimate levels throughout the development of capital projects.

Deliverables/Milestones	Due Date	Status	Comments
Identify estimate levels for project for establishing and refining anticipated costs for outreach activities.	7/30/2018	Completed	
Establish project team	7/30/2018	Completed	
Develop a draft Outreach Cost Matrix for estimating labor and non-labor outreach costs	9/30/2018	Completed	
Conduct Three-Month pilot of draft Outreach Cost Matrix commencing October 2018	12/31/2018	Completed	
Refine Outreach Cost Matrix based on pilot findings and move into production; summarize pilot findings	1/15/2019	Completed	

Cost Benefit Analysis:

The project was completed with in-house resources. To develop an Outreach Cost Matrix, the cost was approximately $9,400 (80 hours at approximately $118 per hour). To implement the Outreach Cost Matrix on an ongoing basis, the project is estimated to take approximately 100 hours per year at a cost of approximately $118 per hour, for a total estimated annual cost of $12,000.

While no direct cost benefits are associated with this initiative, implementation of the Outreach Cost Matrix will result in more accurate cost estimating and variance analysis.

Risk Analysis:
Without implementation of the Outreach Cost Matrix, outreach costs will continue to be approximated at a high level, resulting in additional variance in project cost estimates.

Customer Benefit Analysis:
Implementing a process to estimate the full cost of outreach for major capital projects will improve the overall accuracy of project cost estimates and will, in turn, enable PSEG Long Island to develop more accurate capital budgets and will improve the transparency of the capital planning and outreach processes.

Feedback: N/A.

Recommendation Number: 40 **Item Status** Completed

Recommendation:

Update the External Affairs Handbook to reflect recent lessons learned, the findings in NorthStar's report, the items cited below, and the other recommendation cited in [Chapter XII].

- Expand the discussion of project scoring.
- For all Tier 3 projects, update constituents as the project approaches its start date, or if there are significant project changes (e.g., scope, schedule, location/route, duration, or other item likely to impact the community such as overhead versus underground, pole heights, additional poles, traffic, outages). This is in addition to the annual update on the 5-year capital plan.

Assigned LIPA Staff: Tom Locascio, Director of External Affairs, Gaspare Tumminello, Manager of External Affairs

Assigned PSEG Staff Christopher Hahn - Executive Sponsor; Lauren Hill - Team Leader

LIPA Executive: Bobbi OConnor, Chief Administrative Officer & Board Secretary

Objectives and Assumptions of the Recommendation:

Public outreach regarding planned infrastructure investments allows community members and stakeholders an opportunity to learn about planned work in advance of construction start and provides community members with an opportunity to share feedback about projects. PSEG Long Island has developed and implemented a robust capital project outreach program. The program, described in the External Affairs Outreach Handbook, relies on External Affairs team members to review and score planned construction projects on a range of criteria, including:

- Project Need;
- Community Impacts;
- Government Dynamics;
- Media Environment;
- Permitting and Regulatory Requirements;
- Aesthetic Impacts;
- Environmental Impacts;
- Historical and Cultural Impacts; and
- Construction Considerations.

Recent regulatory and legislative changes have enhanced the outreach requirements for high-voltage transmission projects. While most of these new requirements are consistent with outreach practices that were historically completed at the External Affairs District Managers' recommendations, PSEG Long Island will be expanding upon and substantially revising the Outreach Handbook to formalize outreach practices consistent with these new requirements.

In addition, it is the current practice of External Affairs District Managers to update project scorecards, update outreach plans, and inform community stakeholders of

significant changes to earlier communications in the event that project designs or project schedules change. This practice will be formalized in the next version of the Outreach Handbook.

Finally, the Outreach Handbook will be updated to include additional modifications to outreach planning and execution, such as detailed non-labor outreach budgeting and web site maintenance. Accordingly, the Outreach Handbook will remain a consistent reference for the External Affairs team. The updated Outreach Handbook will also continue to provide regulators and community stakeholders with a transparent guide to PSEG Long Island project outreach practices. These enhancements will further document PSEG Long Island's strategy to communicate issues of significance to customers regularly and in a timely manner, particularly for Tier 3 projects, as recommended in the 2013 NorthStar audit item 15.4.5.

Deliverable: **Ranking:** Low

The PSEG Long Island External Affairs team will work with an outside vendor to review and update the Outreach Handbook consistent with recommendations in the NorthStar report and recent lessons learned.

Deliverables/Milestones	Due Date	Status	Comments
Hold in-depth kick-off and review session on existing and recommended policies of the Outreach Handbook	12/15/2018	Completed	
Vendor to prepare first draft of updates to Outreach Handbook to reflect recommendations in Chapter XII as well as a discussion of compliance with recent regulatory and legislative changes	2/28/2019	Completed	
Conduct review of first draft with internal stakeholders	3/31/2019	Completed	
Vendor to prepare second draft of Outreach Handbook consistent with review comments	5/15/2019	Completed	
Conduct review of second draft with internal stakeholders	6/15/2019	Completed	
Vendor to prepare final draft of revised Outreach Handbook consistent with review comments	7/15/2019	Completed	
External Affairs team to review and implement revised Outreach Handbook	8/15/2019	Completed	

Cost Benefit Analysis:

The project was completed by an outside vendor with guidance from in-house resources. Outside vendor costs were approximately $75,000 over the nine-month timeline. In addition, the project took approximately 100 hours of in-house guidance and over site at approximately $118 per hour, for an approximate cost of $12,000.

Benefits include greater transparency and consistency around capital project outreach efforts.

Risk Analysis:
A clearly documented and regularly documented outreach process minimizes risk of loss of knowledge in the event of staff changes and also ensures that newly hired staff is provided with a comprehensive tool on departmental objectives and goals. This, in turn, ensures that customers will benefit from consistent, informative, and timely project outreach.

Customer Benefit Analysis:
Robust outreach in advance of planned system investments in the community enhances customer and stakeholder understanding of the importance of planned system investments. Outreach also allows stakeholders to express concerns in advance so PSEG Long Island can identify opportunities to mitigate community concerns.

Feedback: N/A.

Recommendation Number: 41 **Item Status** Completed

Recommendation:

Formalize external affairs training program and enhance to include the following:
- Outreach expectations and requirements (e.g., frequency and information to be communicated)
- Scoring methodology and application of the scoring rubric in a consistent, objective manner
- Documentation requirements
- The External Affairs Handbook and other policies and procedures
- Communication with the DPS
- When various outreach activities/communications methods are required or should be employed
- Developing budgets for capital project outreach.

Assigned LIPA Staff: Tom Locascio, Director of External Affairs, Gaspare Tumminello, Manager of External Affairs

Assigned PSEG Staff Christopher Hahn - Executive Sponsor; Lauren Hill - Team Leader

LIPA Executive: Bobbi OConnor, Chief Administrative Officer & Board Secretary

Objectives and Assumptions of the Recommendation:

Through a robust, consistent outreach process, External Affairs District Managers seek to provide timely, accurate information to customers and stakeholders in the communities we serve. External Affairs District Managers are the lead point of contact for PSEG Long Island communications with elected officials and their staffs on Long Island and the Rockaways. When District Managers are hired, they receive training that covers topics such as utility operations, the electric grid, storm response, vegetation management, and capital projects. As the work plans in this document are implemented, External Affairs team members will be trained on additional policies, procedures, and practices.

Deliverable: **Ranking:** Low

Subcommittees of the PSEG Long Island External Team will develop training modules and conduct training for the full External Affairs team. Several recommended training will be developed once the subject matter is finalized, as described in other recommendation plans and as noted in the deliverables chart below.

Deliverables/Milestones	Due Date	Status	Comments
Hold Kick-Off Meeting and Assign Training Modules to Subcommittees	8/8/2018	Completed	
Establish Project Team	8/8/2018	Completed	
Develop Module 4: Communication with the DPS Subcommittee develops draft Module 4	9/30/2018	Completed	
Develop Module 3: Documentation requirements. Subcommittee develops draft Module 3	10/31/2018	Completed	
Internal Stakeholder Review of Module 4	10/31/2018	Completed	
Changes Incorporated and Module 4 Finalized	11/15/2018	Completed	

Internal Stakeholder Review of Module 3	11/30/2018	Completed	
Develop Module 2: Scoring methodology and application of the scoring rubric in a consistent, objective manner. Subcommittee develops draft Module 2	11/30/2018	Completed	
Conduct Training on Module 4	11/30/2018	Completed	
Develop Module 1: Outreach expectations and requirements (e.g., frequency and information to be communicated), When various outreach activities/communications methods are required or should be employed. Subcommittee develops draft Module 1	12/31/2018	Completed	
Internal Stakeholder Review of Module 2	12/31/2018	Completed	
Changes Incorporated and Module 3 Finalized	12/31/2018	Completed	
Changes Incorporated and Module 2 Finalized	1/31/2019	Completed	
Conduct Training on Module 3	1/31/2019	Completed	
Subcommittee develops draft Module 5; developing outreach budgets for capital projects	2/15/2019	Completed	
Internal Stakeholder Review of Module 1	2/15/2019	Completed	
Internal Stakeholder Review of Module 5	2/28/2019	Completed	
Conduct Training on Module 2	2/28/2019	Completed	
Changes Incorporated and Module 5 Finalized	3/15/2019	Completed	
Changes Incorporated and Module 1 Finalized	3/15/2019	Completed	
Conduct Training on Module 5	4/15/2019	Completed	
Conduct Training on Module 1	4/15/2019	Completed	
Subcommittee develops draft Module 6; External Affairs handbook and other policies and procedures	10/15/2019	Completed	
Internal Stakeholder Review of Module 6	11/15/2019	Completed	
Changes Incorporated and Module 6 Finalized	11/30/2019	Completed	
Conduct Training on Module 6	12/31/2019	Completed	

Cost Benefit Analysis:

The project will be completed with in-house resources. To develop and train on the full set of training modules identified in the Northstar recommendations, the project is estimated to take 420 hours at approximately $118 per hour, for a total estimated cost of $50,000. The below chart reflects estimated labor hours to develop each module:

Training Module	Estimated Labor Hours
Module 1: Outreach Expectations and Requirements	100 hours
Module 2: Project Scoring	60 hours
Module 3: Documentation Requirements	60 hours
Module 4: Communication with the DPS	20 hours
Module 5: Outreach Budgets	60 hours
Module 6: External Affair Handbook and Procedures	120 hours

While no direct cost benefits are associated with this recommendation, formal training of the External Affairs team helps to provide a consistent approach to external outreach activities.

Risk Analysis:
Consistent training ensures that new External Affairs team members will conduct outreach and liaison with elected officials and their staffs in a manner that is consistent with established policies, procedures, and practices. Customers and stakeholders, in turn, will benefit from consistent and timely information about PSEG Long Island activities and initiatives.

Customer Benefit Analysis:
Consistent, robust outreach about PSEG Long Island initiatives and programs provides an opportunity for customers and community stakeholders to provide PSEG Long Island with feedback. Thorough training enables the External Affairs team to conduct outreach in a uniform, well-informed manner.

Feedback: N/A.

Recommendation Number: 42 **Item Status** Completed

Recommendation:

Develop formal public outreach plans for each Tier 3 project (i.e., not a spreadsheet). At a minimum the plans should include the following, and should be updated as the project or anticipated outreach requirements change:
•Description of the project, including timeline and key milestones
•Checkpoints to identify any significant changes in project scope or timing
•Scoring sheets and a discussion of key concerns and how to mitigate them
•Discussion of alternatives considered
•Project budget and detailed outreach budgets
•Anticipated frequency of communications/timeline, planned outreach activities and materials.

Assigned LIPA Staff: Tom Locascio, Director of External Affairs, Gaspare Tumminello, Manager of External Affairs

Assigned PSEG Staff Christopher Hahn - Executive Sponsor; Lauren Hill - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

A robust public outreach process provides an opportunity for our customers and community stakeholders to learn about planned infrastructure investments in their community, and to provide feedback about any concerns about planned work. The PSEG Long Island External Affairs team has developed and implemented a defined approach for organizing, planning, and executing its outreach activities to align with planned capital investments and potential community response.

This approach is documented in the External Affairs Outreach Handbook. To date, External Affairs District Managers have maintained an abbreviated form to document planned outreach activities. The form currently in use does not document the thorough project evaluation, alternatives review, budgeting process, or detailed communication strategy developed and implemented by the External Affairs team during the course of project outreach.

Development and implementation of a formal, detailed Outreach Plan will allow for greater transparency around planned outreach endeavors, particularly with respect to oversight agencies such as the DPS and LIPA. In 2013, in item 15.4.4, NorthStar recommended that PSEG Long Island develop a comprehensive, coordinated communications, government and public affairs strategy and associated policies and procedures.

In 2018 NorthStar identified improvements made by PSEG Long Island and suggested opportunities for further enhancements. The development of comprehensive outreach plans continues upon the improvements PSEG Long Island has already made in the area of capital project communications.

Deliverable: **Ranking:** Moderate

A Draft Outreach Planning Template will be developed with in-house resources. The plan will include:

- Description of the project, including timeline and key milestones
- Checkpoints to identify any significant changes in project scope or timing
- Scoring sheets and a discussion of key concerns and how to mitigate them
- Discussion of alternatives considered
- Project budget and detailed outreach budgets
- Anticipated frequency of communications/timeline, planned outreach activities and materials.

The External Affairs team will pilot the Draft Outreach Planning Template for a calendar quarter before finalizing and implementing across the project portfolio.

Deliverables/Milestones	Due Date	Status	Comments
Establish Project Team and Hold Kick-Off Meeting	8/30/2018	Completed	
Project Team to Develop Draft Outreach Planning Template including description of project, including key milestones; checkpoints; scoring sheets; discussion of alternatives considered; anticipated frequency of communnications	10/15/2018	Completed	
External Affairs team pilots Draft Outreach Planning Template	12/31/2018	Completed	
Hold review session to gather feedback on Draft Outreach Planning Template	1/31/2019	Completed	
Finalize Outreach Planning Template, incorporating feedback from pilot and appending Outreach Cost Matrix	2/15/2019	Completed	
Train External Affairs team on finalized Outreach Planning Template	3/15/2019	Completed	

Cost Benefit Analysis:

The project was completed with in-house resources. To develop an Outreach Planning Template, the project cost approximately $19,000 (160 hours at approximately $118 per hour). To implement the Outreach Planning Template on an ongoing basis, the project is estimated to take approximately 150 hours per year at a cost of approximately $118 per hour, for a total estimated annual cost of approximately $18,000.

While no direct cost benefits are associated with this initiative, implementation of the Outreach Planning Template will result in more consistent documentation of outreach activities across the project portfolio.

Risk Analysis:
Consistent and comprehensive outreach planning and implementation will ensure that customers and key stakeholders receive timely, accurate information about construction activities in their communities before planned work commences, and will provide them with an opportunity to share feedback.

Customer Benefit Analysis:
Consistent, robust outreach about PSEG Long Island initiatives and programs provides an opportunity for customers and community stakeholders to provide PSEG Long Island with feedback. Comprehensive documentation of planned outreach activities will facilitate consistent outreach and will enhance coordination with the DPS and LIPA.

Feedback: N/A.

Recommendation Number: 43 **Item Status** Completed

Recommendation:

Document meetings with impacted officials as required by the External Affairs Handbook.

Assigned LIPA Staff: Tom Locascio, Director of External Affairs, Gaspare Tumminello, Manager of External Affairs

Assigned PSEG Staff Christopher Hahn - Executive Sponsor; Lauren Hill - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

PSEG Long Island has assigned External Affairs District Managers to four distinct geographic areas, allowing elected officials and their staff to foster relationships with designated PSEG Long Island representatives. The External Affairs District Managers maintain robust communications with elected officials regarding PSEG Long Island initiatives pertinent to their jurisdictions. Documentation of communications with elected officials and memorializing take-aways from these interactions enhances PSEG Long Island's ability to address any issues arising during the course of ongoing communications

Deliverable: **Ranking:** Low

As of August 2017, the PSEG Long Island External Affairs Director has developed and implemented a weekly tracker for recording meetings, emails, and phone communications with elected officials.

Deliverables/Milestones	Due Date	Status	Comments
Establish documentation log and train External Affairs team on usage	8/6/2017	Completed	
Implement weekly communication tracking	8/7/2017	Completed	

Cost Benefit Analysis:

This has already been implemented. Approximate labor is 4 hours per week of internal labor costs at approximately $118 per hour, for a total annual cost of approximately $25,000.

No direct cost benefits are associated with this initiative.

Risk Analysis:
Documentation of communications reduces the risk that either party to a communication will fail to recall commitments.

Customer Benefit Analysis:
Documentation of meetings and briefings with elected officials will facilitate consistent follow-up on external commitments.

Feedback: N/A.

Recommendation Number: 44 **Item Status** Completed

Recommendation:

Increase the specificity of capital project-related outreach:
- Include more specific, detailed project information on public information meeting letters and notices.
- All outreach materials (i.e., fact sheets and customer letters) resulting in additional poles, pole changes, a shift from underground to overhead cables should indicate such and provided detailed description.
- Consider increased use of pictures and renderings in outreach materials, particularly the reliability web pages.
- Add a link to PSEG Long Island's reliability web page on all outreach materials, particularly customer letters. Include dates materials were added to the reliability project pages of PSEG Long Island's website.
- Consider an icon for "Upcoming projects in your neighborhood" or the equivalent to the www.psegliny.com landing page.
- Include community/public meeting presentations on the reliability pages of PSEG Long Island's website.

Assigned LIPA Staff: Tom Locascio, Director of External Affairs, Gaspare Tumminello, Manager of External Affairs

Assigned PSEG Staff Christopher Hahn - Executive Sponsor; Lauren Hill - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

Enhancing project-specific details in outreach communications and facilitating access to project information on customer communications and on PSEG Long Island's website will increase customer awareness and understanding of planned system investments. These improvements will expand upon PSEG Long Island's comprehensive, coordinated communications, government and public affairs strategy recommended by NorthStar in 2013 audit item 15.4.4 and identified as an area with opportunities for improvement in 2018. More specific customer notices and enhanced content regarding capital projects will expand PSEG Long Island's regularly, timely communications of issues of significance to customers, as recommended by Northstar in audit item 15.4.5 in 2013 and also identified as an area with opportunities for improvement in 2018.

Deliverable: **Ranking:** Low

In-house resources in the External Affairs and Corporate Communications departments will partner to enhance outreach communications and web site information.

Deliverables/Milestones	Due Date	Status	Comments
Include community/public meeting presentations on the reliability pages of PSEG LI's website	11/5/2015	Completed	
Increase use of pictures and renderings on reliability web pages	8/1/2018	Completed	
Include more specific, detailed project information on public information meeting letters and notices	8/1/2018	Completed	
Add a "Current Projects" promotional section and accompanying link to www.psegliny.com homepage	8/1/2018	Completed	

Develop revised letter and fact sheet templates	8/7/2018	Completed	
Train SMEs from External Affairs to maintain reliability web pages as customer letters are mailed out	8/8/2018	Completed	
Implement revised letter and fact sheet templates containing reliability web page URL	8/16/2018	Completed	
Add “date posted” to reliability project pages of PSEG Long Island web site for future postings	9/16/2018	Completed	

Cost Benefit Analysis:

Implementation costs are anticipated to be minimal. All work will be performed with in-house labor and represents a nominal change from current practices. No direct cost benefits are associated with this initiative.

Risk Analysis:
Clear, accessible and recurring presentation of information about planned capital work will reduce the risk that affected customers will not learn about work in their area before construction commences.

Customer Benefit Analysis:
Enhanced communications and web site content regarding reliability communications will improve customer awareness and understanding of planned reliability improvements.

Feedback: N/A.

Recommendation Number: 45 **Item Status** Recurring reports

Recommendation:

Develop and adhere to a schedule for completion of the annual metric identification and target setting process that provides for a final list of approved metrics at the beginning of the measurement year. Tier 1 Metrics, definitions, weightings and targets should be set no later than February 28. There should be a final sign-off on all of the aforementioned elements. Note: This is not intended to imply that the metric book must be completed by February 28; however, it should be done in an expeditious manner.

Assigned LIPA Staff: Michael Quinn, Senior Manager of Performance Assessment & Contract Admin

Assigned PSEG Staff Margaret Keane - Executive Sponsor; Nicholas Nolau - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

Define a timeline for mutual agreement of performance metrics, definitions, weightings and targets by Feb 28th of each year, with presentation of those metrics to the LIPA Board at the annual March meeting.

Deliverable: **Ranking:** Moderate

Final 2019 Performance Metrics letter signed-off by LIPA and PSEG Long Island by no later than February 28, 2019. Sign-off for each subsequent year to occur no later than February 28th.

Deliverables/Milestones	Due Date	Status	Comments
Gather NYS DPS Metric Suggestions.	9/30/2018	Completed	
Conduct and Complete Initial Internal Discussions (LIPA and PSEG Long Island).	10/12/2018	Completed	
Align Metric Benchmarks and Target Setting Using Year-End Data and Benchmarks.	1/31/2019	Completed	
Finalization of 2019 Performance Metrics	2/15/2019	Completed	Additional time required for technical review of Energy Efficiency, Net Write-Offs and OMS int (Completed 3/14/2019)
LIPA and PSEG Long Island Performance Metrics Letter Signed	2/28/2019	Completed	Completed on the revised date of 3/15/2019.
Presentation of Performance Metrics to LIPA Board	3/31/2019	Completed	
LIPA and PSEG Long Island 2020 Performance Metrics Letter Signed	2/28/2020	Completed	
LIPA and PSEG Long Island 2021 Performance Metrics Letter Signed	8/31/2021	Revised	Delayed start to metric development and negotia to matter related to OSA review. Due Date Rev 8/31/2021
LIPA and PSEG Long Island 2022 Performance Metrics Letter Signed	2/28/2022	Not Started	

Cost Benefit Analysis:

There are no additional direct costs, but successful implementation should drive performance improvements.

Feedback: N/A.

Recommendation Number: 46 **Item Status** Completed

Recommendation:

LIPA and PSEG Long Island should streamline its process to facilitate the establishment and measurement of meaningful operational metrics to monitor performance, incorporating DPS staff input, and potentially bifurcating the Tier 2 metrics. This might expedite the finalization of the Tier 1 metrics. Examples include:

- Establish a smaller group of Tier 2 metrics used to test metrics for possible inclusion as a Tier 1 metric or to continue to monitor performance when a Tier 1 metric has been moved to a Tier 2 metric.
- Establish a separate classification of metrics to be used to monitor performance in specific areas or for operational reporting. These metrics would not be tied to compensation and could then be used to address such items as the following:
  - Changes in regulatory requirements or NYS initiatives (e.g., Reforming the Energy Vision, Clean Energy)
  - Elements of LIPA's Strategic Plan, Utility 2.0 or the IRP.
  - AMI implementation status
  - Issues identified by internal or external audits, including performance deficiencies identified by NorthStar's audit.
  - Operational changes or revised priorities.
  - Tracking new initiatives or sub-elements of existing initiatives.
  - Metrics intended to address efficiency and effectiveness.
  - As examples, a number of the Tier 2 metrics used over time would more appropriately have been part of this category: social media followers, staffing levels permanent, percent of financial management reports delivered to LIPA.

Assigned LIPA Staff: Michael Quinn, Senior Manager of Performance Assessment & Contract Admin

Assigned PSEG Staff Margaret Keane - Executive Sponsor; Nicholas Nolau - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

Streamline the metric setting process to facilitate the establishment and measurement of meaningful operational metrics to monitor performance, incorporating DPS staff input. This will be captured in the Contract Administration Manual, specifically CAM-BPE-F1 "Performance Metric Definition and Adjustment Process".

Deliverable: **Ranking:** Moderate

Complete update of Contract Administration Manual CAM-BPE-F1 "Performance Metric Definition and Adjustment Process"

Deliverables/Milestones	Due Date	Status	Comments
Form LIPA and PSEG Long Island working group to review CAM-BPE-F1 "Performance Metrics Definition and Adjustment Process"	10/30/2018	Completed	
Complete Initial Mark-Up of CAM-BPE-F1	12/14/2018	Completed	

Completion and Sign-Off to Updated CAM-BPE-F1 "Performance Metric Definition and Adjustment Process"	2/28/2019	Completed	Final draft executed following revised date. CA signed-off by Rick Shansky and Peggy Keane o 9/25/2019.

Cost Benefit Analysis:

There are no additional direct costs, but successful implementation should drive performance improvements.

Feedback: N/A.

Recommendation Number: 47 **Item Status** Recurring reports

Recommendation:

LIPA and PSEG Long Island should continue to evaluate how to best incentivize service provider performance (Tier 1 metrics), drive continuous improvement and align the metrics with the focus of LIPA and PSEG Long Island's long-term strategy/operational needs and industry best practices.

Assigned LIPA Staff: Michael Quinn, Senior Manager of Performance Assessment & Contract Admin

Assigned PSEG Staff Margaret Keane - Executive Sponsor; Nicholas Nolau - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

The primary objective is to incentivize the service provider to become a first quartile performer across all metric categories of customer satisfaction, technical and regulatory and financial, while focusing on operational and strategic needs and understanding, aligning and targeting performance that is consistent with industry best practices.

Deliverable: **Ranking:** Moderate

Alignment of performance metrics with long-term strategy/operational needs and industry best practices will continue and be accomplished with the completion of the 2019 performance metrics and targets process. However, this is an ever changing and ongoing effort that will continue to be addressed each year via the annual metrics negotiation process. Furthermore, and where applicable, the Authority will rely on and utilize audits and assessments conducted by LIPA, PSEG Long Island and outside parties to identify specific areas of weakness or opportunity that can be addressed via the creation of new metric(s) and associated target(s).

Deliverables/Milestones	Due Date	Status	Comments
Gather Metrics Suggestions From DPS	8/31/2018	Completed	
Identify Potential Performance Metrics Resulting From LIPA's Enterprise Risk Management (ERM) Review Process	8/31/2018	Completed	
Identify Potential Performance Metrics Stemming From LIPA's Internal Audits	9/28/2018	Completed	
Identify Potential Performance Metrics from J.D. Power Annual Assessment and Oversample Data	10/31/2018	Completed	
Conduct Independent Assessment of Performance Metrics and Benchmarking Via Consultant	10/31/2018	Completed	
Completion of 2018 PSEG Long Island Benchmarking Guide	11/30/2018	Completed	
Obtain Additional Current Benchmarking and Best Practice Data Via Multiple Industry Channels, Including: LPPC & APPA Surveys and Data Sources and U.S. Energy Information Administration (EIA) Reports	11/30/2018	Completed	
Complete 2019 Performance Metric Alignment with Long-Term Strategy/Operational Needs and Industry Best Standards	1/31/2019	Completed	
Complete 2020 Performance Metric Alignment with Long-Term Strategy/Operational Needs and Industry Best Standards	1/31/2020	Completed	New completion date: 2/28/2020.

Complete 2021 Performance Metric Alignment with Long-Term Strategy/Operational Needs and Industry Best Standards	9/22/2021	Revised	Completion dates for this step are hereby revise February 28, or the first business day thereafter. New Delivery Date: 9/22/2021 - Delayed start t development and negotiations due to matters re OSA review.
Complete 2022 Performance Metric Alignment with Long-Term Strategy/Operational Needs and Industry Best Standards	2/28/2022	Not Started	See above.

Cost Benefit Analysis:

No significant incremental costs are anticipated beyond the typical budget for third party consultant and audit services. The benefit will be realized through various performance improvements, however, specific costs and benefits cannot be ascertained at this time.

Feedback: N/A.

Recommendation Number: 48 **Item Status** Completed

Recommendation:

Define the metric calculation methodology to specify whether service restorations completed in exactly two hours should be included in the ETR Accuracy performance metric. NorthStar found the specified calculation methodology open to some interpretation. Currently, PSEG Long Island does not include restoration times of exactly two hours. This should be reconciled between PSEG Long Isand and LIPA.

Assigned LIPA Staff: Michael Quinn, Senior Manager of Performance Assessment & Contract Admin

Assigned PSEG Staff Margaret Keane - Executive Sponsor; Nicholas Nolau - Team Leader

LIPA Executive: Billy Raley, Senior Vice President of T&D Oversight

Objectives and Assumptions of the Recommendation:

The recommendation is to clarify the calculation methodology and metric definition for ETR accuracy performance metric and how a restoration time of exactly two hours is calculated.

Deliverable: **Ranking:** Low

LIPA and PSEG Long Island agreed to alter the metric definition and metric calculation for the ETR accuracy metrics to clarify what is considered achieving the targeted results.

The current definition states:

Estimated Time of Restoration (ETR) Accuracy is the ability to provide ETR estimates (including Initial ETR (ITR) and up to 2 ETR changes (ETR 1 and ETR 2)) that are achieved at or in advance of the predicted restoration time (ITR) or within two hours or less of the final projected ETR for a customer (ETR 1 and ETR 2). Excludes any data that meets PSC exclusion criteria.

The current calculation is:

[Number of outages restored within ETR tolerance]/[Total number of ETRs provided for ITR, ETR 1 and ETR 2]. Tolerance is defined as no greater than ITR or no more than 120 minutes prior to ETR 1 and ETR 2. More than 2 ETR changes (i.e., ETR 3) is defined as a "FAIL".

The new agreed upon definitions and calculations for the metrics are stated below and will be reflected in the July 2018 scorecard.

New definition states:

Estimated Time of Restoration (ETR) Accuracy is the ability to provide ETR estimates (including Initial ETR (ITR) and up to 2 ETR changes (ETR 1 and ETR 2)) that are

achieved at or in advance of the predicted restoration time (ITR) or within two hours or less of the final projected ETR for a customer (ETR 1 and ETR 2). Excludes any data that meets PSC exclusion criteria. Any restoration that is exactly two hours is considered achievement of the metric and will not be counted as a “FAILED” ETR.

New calculation is:

[Number of outages restored within ETR tolerance]/[Total number of ETRs provided for ITR, ETR 1 and ETR 2]. Tolerance is defined as no greater than ITR or no more than 120 minutes prior to ETR 1 and ETR 2. More than 2 ETR changes (i.e., ETR 3) is defined as a “FAIL”. Any restoration that is exactly two hours is considered achievement of the metric and will not be counted as a “FAILED” ETR.

Deliverables/Milestones	Due Date	Status	Comments
Calculation in the August 2018 scorecard package to clarify the metric definition and calculation	9/1/2018	Completed	

Cost Benefit Analysis:
Not applicable

Risk Analysis:
Not applicable

Customer Benefit Analysis:
Not applicable

Feedback: N/A.

Recommendation Number: 49 **Item Status** Completed

Recommendation:

Memorialize the process regarding PSEG Long Island conflict of interest in regional market activities (discussed in Section 4.18 of the A&R OSA) in the Contract Administration Manual (CAM).

Assigned LIPA Staff: David C. Clarke, Director of Wholesale Market Policy

Assigned PSEG Staff Paul Napoli - Executive Sponsor ; Peter Andolena - Team Leader

LIPA Executive: Rick Shansky, Senior Vice President of Power Supply and Wholesale Markets

Objectives and Assumptions of the Recommendation:

PSEG Long Island, under the Amended & Restated OSA with LIPA is required to provide Regulatory Support, Reporting and Policy Recommendations for all Regulatory Markets that LIPA is active in. This essentially requires representation on over 40 Committees in PJM, NYISO, and ISO-NE as well as coverage of certain PSC/DPS, FERC and NERC related matters. PSEG Long Island utilizes subject matter experts, attorneys and consultants, who attend and/or provide support for these meetings/matters and regularly report back via weekly policy and committee conference calls that occur with LIPA.

Section 4.18 of the Amended & Restated OSA is a "Conflicts of Interest" provision that allows PSEG Long Island to modify its role from that of "policy advocate" to "policy adviser" for LIPA if it is determined that a regulatory policy position that would favor LIPA is in potential conflict with a position taken by another PSEG Affiliate. In the reduced role of policy adviser, PSEG Long Island will still provide administrative and technical support to LIPA on these issues as required. In this role, however, PSEG Long Island removes itself from all voting matters and public advocacy, deferring to LIPA. All correspondence regarding these issues will be solely signed and submitted

Deliverable: **Ranking:** Low

PSEG Long Island Power Markets will memorialize the process, working with members from its Process Documentation and Legal Departments, will develop a formal procedure that will be incorporated into its CAM to identify and address potential Conflicts of Business Interests as defined in this document and in the Amended & Restated OSA.

Deliverables/Milestones	Due Date	Status	Comments
Identify key PSEG Long Island personnel and departments needed to address the issue.	6/29/2018	Completed	
Hold a "Kickoff Meeting" to identify key deliverables and milestones.	7/10/2018	Completed	
Develop First Draft of CAM Procedure. (Flowcharts, descriptions, etc.)	7/20/2018	Completed	
PSEG Long Island Review and Comment Period (Route - internal review)	7/30/2018	Completed	
Final PSEG Long Island Draft Document (For submission to LIPA)	8/6/2018	Completed	

Finalize LIPA and PSEG Long Island Reviews and incorporate into the CAM.	11/30/2018	Completed	

Cost Benefit Analysis:

This is a documentation process which memorializes current procedures to resolve potential conflicts of business interests as defined in the Amended and Restated OSA in the CAM.

There are nominal incremental costs to document a procedure to address PSEG Long Island conflict of interest in regional market activities.

Feedback: N/A.