

Audit Implementation Plan Updated

Consolidated Edison
Company of New York, Inc. and
Orange & Rockland Utilities, Inc.
Case 14-M-0001

October 13, 2017



**Consolidated Edison Company of New York, Inc. and
Orange & Rockland Utilities, Inc.
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I Executive Summary

In December 2014, the New York Public Service Commission (“Commission” or “PSC”), in Case 14-M-0001, commenced the comprehensive management and operations audit of the Consolidated Edison Company of New York, Inc. (“CECONY”) and Orange & Rockland Utilities, Inc. (“O&R”) (collectively “the Company”) in accordance with Public Service Law §66(19). Through a competitive bidding process, the PSC selected NorthStar Consulting Group (“NorthStar”) to perform the audit on behalf of the PSC. Since its start in April of 2015, the Company, Staff, and NorthStar have worked collaboratively to facilitate this review of the Company’s management processes. Pursuant to PSL §66(19), audits are required to be performed at least once every five years for combination electric and gas utilities and *“[t]he audit shall include, but not be limited to, an investigation of the company's construction program planning in relation to the needs of its customers for reliable service, an evaluation of the efficiency of the company's operations, recommendations with respect to same, and the timing with respect to the implementation of such recommendations.”*¹

The audit concluded in February of 2016, and NorthStar’s Final Report dated April 21, 2016, was released on May 20, 2016. The audit was discussed at the Commission session on May 19th, and a Commission letter instructing the Company to submit an implementation plan by June 20, 2016 was issued on May 20, 2016. In response to the Commission’s letter of May 20, 2016, the Company submitted its implementation plan. In this audit implementation plan (“Implementation Plan”), the Company set forth its plan and how it will implement the recommendations identified in the Final Report.

CECONY and O&R have been deferring the audit charges, with interest, that have been paid to NorthStar. CECONY electric and gas have included their share of the costs in their base rate filings in Case 16-E-0060 and 16-G-0061. O&R and CECONY steam will seek recovery of their share of the costs in their next base rate filings.

A. Overall Process

The scope of the operations and management audit included a comprehensive examination of the multiple aspects of the Company’s management process, including the following focus areas:

- Corporate Governance
- System Planning and Capital and O&M Budgeting
- Program and Project Planning and Management
- Work Management
- Performance and Results Management
- Customer Operations
- Shared Services and Affiliate Transactions

The Company committed senior executives and a full-time management audit team at both CECONY and O&R to facilitate the audit process and to be timely and responsive to audit inquiries. The Company

¹ PSL §66(19).

embraced the idea of being involved in this collaborative work effort. The process was consistent with the Company's commitment to excellence and seeking continuous improvement in its business processes. Identifying and implementing improvements enables the Company to operate more effectively and efficiently, fosters a culture of customer centric thinking and promotes delivery of the most reliable, safe and quality services to our customers.

Throughout the discovery process, the Company collaborated with Staff and NorthStar to work through inquiries and issues through positive and productive discussions, as well as meetings and presentations to ensure that each entity reached a mutual and full understanding of matter(s) at hand. This open and collaborative work practice fostered a smooth and efficient completion of the discovery process, acceptance of the final report, and the commencement of the implementation phase. The Company fully supports a collaborative audit approach in future management audits and believes that collaborative efforts lead to better understanding of issues and therefore better solutions.

The Final Report resulted in 36 recommendations. The Company will consider each of the 36 recommendations, engage the Company's skilled subject matter experts to review each recommendation, and develop an implementation plan that will most effectively address each recommendation. The Company is fully committed to the success of this implementation plan.

B. Recommendations

The 36 recommendations from the audit are distributed across the areas of focus shown in the table below.

Recommendations By Focus Area	Total
Corporate Governance	4
System Planning and Capital and O&M Budgeting	5
Program & Project Planning and Management	7
Work Management	6
Performance and Results Management	1
Customer Operations	8
Shared Services and Affiliate Transactions	5
Total	36

The Company is taking an integrated and comprehensive approach in addressing these recommendations. The Company has created 36 work teams to independently review each recommendation and associated conclusions. As a commitment to the success of the implementation process, each of the work teams has been assigned one or more executive level sponsors. Each work team is also comprised of skilled Company subject matter experts appointed to evaluate, develop and drive the implementation of effective and appropriate solutions.

C. Organization Structure and Process for Implementation

The Company has established a project management approach as described within this implementation plan to evaluate and address each of the 36 recommendations. To facilitate this process, the recommendations have been assigned to 36 implementation work teams with at least one executive sponsor assigned to oversee each recommendation's implementation plan development and execution.

Overall responsibility for implementing the plan will be co-led by the Vice President of Business Finance at CECONY and the Vice President of Operations at O&R, who will ensure that recommendations are addressed in an integrated and comprehensive manner to achieve operating efficiency and consistency for the benefit of customers.

In addition to the executive sponsor(s) providing executive-level oversight on each recommendation work team, the Corporate Leadership Team (CLT) at CECONY and Corporate Policy Committee (CPC) at O&R, will be fully engaged providing review and guidance at appropriate intervals throughout the implementation process to ensure that all aspects of the plan are aligned with the Company's strategic goals and vision for the future. The CLT and CPC will also provide support in communicating any resultant policy changes to the Company's employees. The Boards will receive updates on implementation activities and status.

D. Goals of Implementation and Priorities

The implementation of the recommendations is a company-wide effort that includes active participation and engagement from employees at all levels throughout the Company, with the full support and leadership of both the CECONY and O&R Boards and executive management. Consistent with the Company's commitment to customer focus, operational excellence, safety and continuous improvement in its business processes, the Company envisions that the implementation plan and efforts will result in improvements that will provide more effective and efficient processes within the Company's operations, continue to build on the Company's culture of inspiring customer centric thinking and engagement, identify and apply best practices, and promote the delivery of the most reliable, safe and quality services to our customers at a reasonable cost. By leveraging this sharing of information, the Company can maximize efficiency and consistency in the way we do business and provide service to our customers.

The NorthStar Final Report cited key areas of recommendations as follows:

- Competitive Procurement Levels
- CEO Certification
- Integrated Electric Distribution System Plans
- Consistent Project and Program Management
- Work Management Process Improvement

The Company acknowledges that all 36 recommendations require thorough review, analysis and consideration to ensure that the best solutions are identified and implemented. Certain key recommendations are being pursued on an accelerated basis, such as driving Competitive Procurement

Levels to exceed previous levels of performance and others listed above. These high priority items address actions for implementation that will yield either significant strategic or the most immediate benefit to customers.

II Audit Implementation Plan

The Company recognizes that it needs to routinely re-examine its planning and operating processes to seek increased economic efficiency and to achieve long term success of the Company.

The Company's submission of this implementation plan is the first step toward compliance with PSL §66(19) (b). The Company intends to update this initial report on a periodic basis and provide those updates to the Commission. The table in Appendix A provides the numbering sequence, chapter reference, recommendation, relative priorities (i.e. high to low) and status regarding the implementation of each recommendation. The table in Appendix C provides a summary of cost and associated details regarding each recommendation.

A. Priority and Status of Recommendations

Each of the 36 teams has individually examined the Final Report's statements of relevant findings, conclusions, and the associated recommendation(s). As mentioned above, Appendix A to this implementation plan reflects the relative priorities (i.e. high to low) and status regarding the implementation of each recommendation. Each are assessed under one of the following four status categories:

- | | |
|---------------|---|
| In Progress: | Concurrence with Final Report's statement of relevant finding(s) and conclusion(s); recommendation is appropriate based on preliminary customer benefit and risk assessment; implementation plan with milestones established and in progress subject to additional cost benefit and risk review. |
| Under Review: | Evaluation of recommendation is in progress and acceptance will be contingent on results of further analysis. A determination will be made whether the recommendation is viable for being accepted, whether an alternative approach will be pursued or whether the recommendation will not be accepted. |
| Not Accepted: | Final report's identification of relevant finding(s) and conclusion(s) has been reviewed; implementation activity is not warranted at this time. |
| Completed: | The Company's response to this recommendation and its findings are complete; no further action is required or expected |
| Closed: | The Company's response has been accepted and closed by PSC staff; no further updates required |

Appendix B provides each recommendation's individual implementation plan. It provides information on each, including but not limited to, project description, objectives and scope as well as a work plan,

inclusive of deliverables and milestones with associated dates, and a summary of customer-benefit and risk analysis, where applicable.

B. Customer Benefit and Risk Analysis

The Company is committed to customer-centric thinking and keeping customer value at the forefront of its business decisions. As such, a guiding principal throughout all qualitative and/or quantitative analyses is customer cost, benefit, and risk. The Company will evaluate the costs, benefits and risks of implementation actions where appropriate in order to determine whether implementation would be beneficial. These calculations are expected to be preliminary in the initial stages of the evaluation and develop further as efforts progress and more information is available. In addition, for some recommendations, a tangible cost benefit analysis will not be readily quantifiable, and in such cases the Company will require that qualitative measures indicate adequate customer benefits to warrant the implementation action.

Each recommendation will be evaluated by the Company in the context of cost, customer value and feasibility. In cases where the Company's evaluation supports the implementation of a recommendation, the Company will act to implement the recommendation. Similarly, should evaluation of a recommendation show that the identified benefits will not materialize to an extent appropriate to justify actions, the Company will suggest an alternative in accordance with the guidance provided by the Commission in its letter dated May 20, 2016. Furthermore, if analysis shows that further action to address an ongoing initiative will not be beneficial, the Company will change course accordingly to avoid negative impacts. These evaluations will be reflected in the Company's implementation plan updates to the PSC every four months.

III Conclusion

The Company recognizes that the findings, observations, and recommendations of the management audit represent an opportunity for effecting improvements for the benefit of customers. The Company and its executive leadership are committed to collaborating with the PSC and other stakeholders on implementation activities. The Company will provide formal updates to the Commission every four months. The Company will assess each of the recommendations carefully and looks forward to implementing those recommendations that will result in short term and long term benefits to our customers.

IV Appendices

Appendix A: Key of Recommendations, Priority, and Status

Note: Priority items are designated by an “H” (signifying a “high” priority), an “M” (signifying a “medium” priority), and “L” (signifying a “low” priority).

#	Chapter	Recommendation	NorthStar Priority	Company Priority	Status
1	III-1 Corporate Governance	Increase the level of sharing of best practices between O&R and CECONY by developing a protocol, and explore additional opportunities for potential cost savings resulting from standardized process or economies of scale.	M	M	Accepted- Complete
2	III-2 Corporate Governance	Regarding the Chief Executive Officer (CEO) Certification process: <ul style="list-style-type: none"> • Develop appropriate processes to disseminate modifications or updates to policies, procedures and controls as a result of Internal Audits and QA reviews to the appropriate CEO Certification representative in order to update matrices as required. • Individuals performing Internal Audits and QA reviews should be aware of the CEO Certification policies, procedures and controls that may be within the scope of the planned review. • On a going forward basis, using a risk-based prioritization process, revisit critical policies, procedures and controls to ensure they properly address the requirements to which they have been assigned. Consider adding monitoring requirements to safety- related procedures. 	H	H	Accepted- Complete
3	III-3 Corporate Governance	DPS and the Joint Utilities should meet to clarify all parties’ understanding of the requirements of the CEO Certification process.	H	H	Closed
4	III-4 Corporate Governance	Replace one or more of the Named Fiduciaries with other employees not directly involved in management of the Consolidated Edison Retirement Plan Trust. The replaced officers, CFO and Chief Accounting Officer, could still provide his/her expertise as the senior officer in his/her area of responsibility. The newly appointed officers could meet the obligations of Named Fiduciaries and draw on the expertise of the senior offices who now serve as Named Fiduciaries.		L	Closed

#	Chapter	Recommendation	NorthStar Priority	Company Priority	Status
5	IV-1 System Planning	Develop comprehensive and integrated electric distribution system plans for CECONY and for O&R that utilize a consistent approach to asset management, regulatory programs (including Reforming the Energy Vision (REV)) and system growth. The initial structure and content of the plans should be included in the Distributed System Implementation Plans (DSIPs) to be submitted to the Commission mid-2016.	H	H	Closed
6	IV-2 System Planning	Develop and implement the capital program optimization model across both companies and organizational units in a consistent manner.	M	M	Accepted-Complete
7	IV-3 System Planning	Develop a CECONY comprehensive secondary electric network asset management plan.	M	M	Accepted- In Progress
8	IV-4 System Planning	Reevaluate the projected costs and timeline of the Accelerated Main Replacement program for consistency with project objectives.	M	H	Closed
9	IV-5 System Planning	Improve competitive procurement levels to reacquire and exceed previous levels of performance.	H	H	Accepted-Complete
10	VI-1 Program and Project Planning and Management	Develop a consistent approach to program and project management throughout CECONY and O&R. Establish and enforce formal project management control procedures, especially regarding instances when CECONY capital projects are transferred between organizations. Establish an organizational unit responsible for standardizing project management practices to accomplish this effort.	H	H	Accepted-Complete
11	VI-2 Program and Project Planning and Management	Charge actual CECONY engineering and construction oversight costs directly to capital projects so the booked capital costs reflect the actual costs of the project.	M	M	Accepted-In Progress
12	VI-3 Program and Project Planning and Management	Revise CECONY processes and procedures to require that estimated and booked project costs include all costs.	H	M	Closed
13	VI-4 Program and Project Planning and Management	Update CECONY contracting and procurement procedures to assign roles and responsibilities in the event that Bid Check estimate is the low bid.	L	L	Closed

#	Chapter	Recommendation	NorthStar Priority	Company Priority	Status
14	VI-5 Program and Project Planning and Management	Establish a process to ensure that there is a CECONY Project Manager assigned to manage the work when a CECONY project is performed by NYC contractors.	H	M	Closed
15	VI-6 Program and Project Planning and Management	Formalize the O&R contractor oversight rotation policy and revise O&R contract management procedures to provide more detailed guidance regarding the use of the Contractor Oversight System.	L	L	Accepted-Complete
16	VI-7 Program and Project Planning and Management	Perform a formal review of O&R change orders on a semi-annual basis to identify and distribute lessons learned.	M	M	Accepted-Complete
17	VII-1 Work Management	Continue CECONY Gas Operations work management process improvement activities in accordance with its Gas IT Roadmap.	H	H	Accepted- In Progress
18	VII-2 Work Management	Develop formal reports on CECONY and O&R trends in work load levels, workforce productivity and utilization.	M	M	Accepted-Complete
19	VII-3 Work Management	Establish formal processes to use work management data for annual resource planning as part of the annual business planning activities of CECONY Gas Operations, Substations Operations, Transmission Operations and Steam Plants.	M	M	Accepted – In Progress
20	VII-4 Work Management	Develop formal work management practices for CECONY and O&R engineering organizations. Where possible, leverage the results of CECONY Central Engineering's Continuous Improvement Program. The work management systems should have appropriate system tools to support the various individual and distinct engineering functional processes.	M	M	Accepted- In Progress
21	VII-5 Work Management	Develop overtime targets for CECONY and O&R based on economic analyses and verified industry norms.	M	Ref. Liberty Staffing Audit	Ref. Case 13-M-0449*
22	VII-6 Work Management	Develop formal studies and provide updates of contractor versus in-house costs every three to five years, and use the results of these studies in CECONY and O&R resource planning to determine the optimal use of contractors.	M	Ref. Liberty Staffing Audit	Ref. Case 13-M-0449*

*This implementation plan will be updated if this recommendation is not addressed in the Liberty Staffing Audit (Case 13-M-0449) implementation plan.

#	Chapter	Recommendation	NorthStar Priority	Company Priority	Status
23	VIII-1 Performance and Results Management	<p>Modify the O&R performance management process as follows:</p> <ul style="list-style-type: none"> • Modify the employee development key performance indicators (KPIs) to be more reflective of the objective, rather than an evaluation of Human Resources. • Establish more aggressive ATIP KPIs targets that are realistic, but not too easily attainable. • Increase the frequency of communication of performance objectives to the overall employee base and ensure that the use of indices is not creating any confusion or minimizing the significance of individual measures. • Make the ATIP dashboards easier to locate on the intranet site. 	M	M	Closed
24	IX-1 Customer Operations	O&R needs to complete its review of current processes to determine why the error occurred in the service turn on for a commercial customer which took almost one month to complete and implement necessary changes.	M	L	Closed

#	Chapter	Recommendation	NorthStar Priority	Company Priority	Status
25	IX-2 Customer Operations	<p>CECONY has proposed the following solution to address the issues with the denial of service notification for customers that do not currently have service (i.e., service "cold"). NorthStar concurs with the proposed solution, but notes that CECONY must also address the denial of service and document retention requirements for residential and non-residential denials of service required by Parts 11 and 13 of 16 NYCRR for applicants that currently have service (i.e., service "hot").</p> <ul style="list-style-type: none"> • In order to establish processes and controls so that Turn-On denial letters are sent in all cases where service is not already on at the premise, CECONY proposes that a training document be sent to all Customer Service Representatives reminding them of the Turn- On denial process. • In addition, as an interim additional control measure, reports of all of the Turn-On Deny notations will be generated and produced on a daily basis for review. Customer Assistance staff will review the list to validate that the Turn-On Deny letter was sent to the applicant, and take action as necessary. • In the longer term, an automated solution will be evaluated to improve controls. A cross- functional team will be assembled to develop this automated solution and to evaluate feasibility, costs and prioritize implementation. It is expected that a recommendation for an automated solution will be available by third quarter 2016. • Currently, in situations where service is "hot" (i.e., already on at the premise), a control exists if the customer continues to use service but does not contact the company. Accounts registering usage on a meter after a cycle reading that do not have a customer of record generate inactive advance notices which are sent to the location. There is currently a group in Field Operations dedicated to reviewing accounts with a Turn-Off field order, which is generated after two cycle readings register usage on a meter. 	L	L	Closed

#	Chapter	Recommendation	NorthStar Priority	Company Priority	Status
26	IX-3 Customer Operations	<p>Modify O&R's Joint Procedures – 0011 “Customer Deposits for Gas and Electric Service” as follows:</p> <ul style="list-style-type: none"> • Eliminate the section that allows O&R to charge a deposit for a new residential customer that is considered a credit risk. • Modify the language regarding deposit payment arrangements to allow the customer to pay in 12 monthly installments. • Eliminate the language that indicates that residential customers that cannot pay the deposit in full will either be turned off or not turned on. • Clarify that the payment of the security deposit in full as a condition of service for non- residential customers is applicable to new customers only. • Clarify the language regarding the length of time non-residential deposits such that it is clear that deposits will only be held longer than 3 years in the event of delinquency. 	L	L	Closed
27	IX-4 Customer Operations	<p>Make the following modifications to O&R's collections notices and website:</p> <ul style="list-style-type: none"> • Once current stock has been depleted or other changes warrant, modify O&R's “Your Rights and Responsibilities as a Commercial Customer of Orange & Rockland” to specifically inform non-residential customers that they may request a review to ensure a required security deposit is not excessive. • Modify O&R's residential customer broken agreement letter to include the address and telephone number of the appropriate social services office or the local social service information number, as required by Part 11.10 of HEFPA. • Correct the portion of O&R's web page describing the requirements for enrollment into the residential levelized payment plan to clarify that customers may enroll at any time. 	L	L	Closed
28	IX-5 Customer Operations	<p>Modify CECONY's CSR training (DR 201-C, Attachment 12, p. 9-14) to be consistent with the security deposit installment plan requirements of HEFPA. According to a 2/18/16 email from CECONY this issue has already been corrected in response to NorthStar's inquiry of 2/17/16. NorthStar has not verified the correction.</p>	L	L	Closed

#	Chapter	Recommendation	NorthStar Priority	Company Priority	Status
29	IX-6 Customer Operations	Evaluate and document the following modifications to CECONY's bills and collections notices: <ul style="list-style-type: none"> • Modify the bill notice section to better highlight critical collections-related bill messages. • Correct CECONY's demand rate bill formats to correctly display the rates. • Modify CECONY's Special Agreement Offer (SAO) postcard to contain language regarding financial need, the \$10 minimum offer or the customer's ability to modify the terms based on changes in their financial circumstances. 	L	L	Closed
30	IX-7 Customer Operations	Determine the cost of limiting CIMS access (O&R) such that CSRs cannot remove the LSE code on a customer account (should be performed by a supervisor or other applicable group) or manually issue a lock for non-payment order on an EBD or LSE customer account. Alternatively, develop reporting to determine if such an event has occurred.	L	L	Closed
31	IX-8 Customer Operations	As part of the current rate case, CECONY and the DPS should review CECONY's customer satisfaction scoring methodologies and associated targets to ensure the indices provide the best information possible.	M	L	Ref. Case 15-M-0566**
32	X-1 Shared Services and Affiliate Transactions	Replace the spreadsheet-based affiliate billing process with an Oracle-based or other compatible based billing system.	L	M	Accepted-Complete
33	X-2 Shared Services and Affiliate Transactions	Develop a corporate cost allocation manual that provides an overview of all allocations in the CEI enterprise and specific account numbers relating back to the shared services organization.		L	Accepted-Complete
34	X-3 Shared Services and Affiliate Transactions	Replace the three-factor allocation formula for CEI costs with a more appropriate formula.		M	Accepted-Complete
35	X-4 Shared Services and Affiliate Transactions	Establish CEI guidelines or clarify the Code of Conduct before appointment of future executives to the Boards of CEBs to prohibit executives with current experience in roles at the utilities related to the business engaged in by the CEB from serving on their Boards.		L	Closed

**This implementation plan will be updated if this recommendation is not addressed in In the Matter of Revisions to Customer Service Performance Indicators Applicable to Gas and Electric Corporations (Case 15-M-0566) implementation plan.

#	Chapter	Recommendation	NorthStar Priority	Company Priority	Status
36	X-5 Shared Services and Affiliate Transactions	Follow CECONY internal procedures regarding oversight of affiliate transactions. Affiliate transactions should be a part of the responsibilities of the Regulatory Compliance Committee.		M	Closed

Appendix B - Implementation Plans

III. Corporate Governance

Recommendation Number 1: III-1

Recommendation: Increase the level of sharing of best practices between O&R and CECONY by developing a protocol, and explore additional opportunities for potential cost savings resulting from standardized process or economies of scale.

Roles and Responsibilities:

Executive Sponsor: Scott Sanders, Frank Peverly
Team Lead(s): Frank LaRocca, Ken Kosior

Scope: Project Purpose, Objectives, and Assumptions:

Develop a standardized protocol, including provisions of when to use the protocol, to analyze processes for completing similar work at O&R and CECONY. The protocol should help users in deciding if a best practice exists; and if so, how to standardize.

Key Assumptions:

- Key SMEs will develop standardization protocol
- SMEs will be available as needed to support the project, in a timely manner
- Policies, procedures and/or guidance documents created to define the protocol will apply to both CECONY and O&R and will be consistently applied

Work Plan:

The team will identify examples of best practices for standardizing processes between O&R and CECONY.

The team will also benchmark other companies' approaches to standardizing best practices across subsidiaries.

The main product of this recommendation will be to develop a guidance document that will provide a process to guide users in sharing best practices between the companies. This document will:

- Explain that these evaluations will be conducted in the normal course of business and escalated throughout the organization to ensure proper review
- Detail the process for determining whether or not to share a practice between companies, and
- Outline the approval process for decisions to share or not to share a practice.

The team will meet on a scheduled basis to complete the project.

Approvals of all key documents and/or process changes will be provided by the Team Leads and Executive Sponsors of this work stream.

Deliverables/Milestones:

Deliverable/Milestone	Start Date	Delivery Date	Comments
Planning	June 6, 2016	July 15, 2016	Complete
Establish team	June 6, 2016	July 1, 2016	Complete
Identify key stakeholders	July 5, 2016	July 15, 2016	Complete
Current State Analysis	July 18, 2016	November 15, 2016	
Identify best practices examples where processes have been standardized between O&R and CECONY	July 18, 2016	August 5, 2016	Complete
Benchmark best practices against external companies with similar challenges and opportunities	July 18, 2016	September 9, 2016	Complete
Summarize external benchmarking results	September 10, 2016	September 23, 2016	Complete
Document current state	September 23, 2016	November 15, 2016	Complete
Design & Implement Future State	September 1, 2016	January 6, 2017	
Draft guidance document	September 1, 2016	October 7, 2016	Complete
Obtain input and approval on guidance document from key stakeholders	October 10, 2016	March 1, 2017	Complete
Finalize guidance document	November 14, 2016	April 1, 2017	Complete
Deliver/Implement guidance documentation to be used by CECONY and O&R	January 3, 2017	May 31, 2017	Complete
Communications / Change Management	September 1, 2016	June 30, 2017	
Develop change/ communication management plan (iterative process)	September 1, 2016	May 31, 2017	Complete
Implement change/ communication management plan	January 9, 2017	May 31, 2017	Complete
Document practices that were reviewed for standardization since beginning of 2016	September 1, 2016	June 30, 2017	Complete

Cost Benefit Analysis:

The Company estimates that it will incur nominal incremental costs to develop a guideline. There may be some costs associated with benchmarking, which will be determined prior to moving ahead with the benchmarking effort.

The estimated internal cost is approximately \$25,000. The project work will be completed with in-house resources, and is estimated to require approximately 420 hours at approximately \$60.00 per hour.

Benefits are dependent on the implementation of specific best practices.

Risk Analysis:

The risks of not completing this recommendation include missed opportunities for knowledge transfer, potential cost savings or reduction of duplicative activities.

February 13, 2017 Update:

The first steps of the implementation plan were to establish a team and to identify key stakeholders throughout the Company to provide structure for implementing this recommendation. The team has worked to document a current state for sharing best practices as well as existing best practice examples shared between CECONY and O&R. Additionally, an external benchmarking study was conducted to see how other companies within the industry standardized common practices. After careful consideration, the team determined that it was more efficient to include and align certain deliverables within the Recommendation 1 implementation plan with the 2017 budget process. This will result in the inclusion of language in the annual budget memo as well as a link to a guidance document that is provided to all officers of CECONY and O&R to kick off the budget process. The Company has engaged with PA Consulting Co. to assist in the development of this guidance document. The annual budget memo is not released until April-May. Therefore the January 6, 2017 and February 28, 2017 deliverable dates from the implementation plan will be moved to May 31, 2017.

June 13, 2017 Update:

The guidance document was completed and distributed with the annual budget memo on Friday, May 5, 2017. The team is working to document practices that were reviewed for standardization since the beginning of 2016.

October 13, 2017 Update:

This recommendation is complete.

The team compiled a list of identified best practices that were reviewed and implemented since the beginning of 2016.

Recommendation Number 2: III-2

Recommendation: Regarding the Chief Executive Officer (CEO) Certification process:

- Develop appropriate processes to disseminate modifications or updates to policies, procedures and controls as a result of Internal Audits and QA reviews to the appropriate CEO Certification representative in order to update matrices as required.
- Individuals performing Internal Audits and QA reviews should be aware of the CEO Certification policies, procedures and controls that may be within the scope of the planned review.
- On a going forward basis, using a risk-based prioritization process, revisit critical policies, procedures and controls to ensure they properly address the requirements to which they have been assigned. Consider adding monitoring requirements to safety-related procedures.

Roles and Responsibilities:

Executive Sponsor: Kimberly Strong
Team Lead(s): Tayo Kurzman

Scope: Project Purpose, Objectives, and Assumptions:

Based on recommendations by the Moreland Commission for Utility Storm Preparation and Response, in 2013 the New York Legislature enacted changes to the Public Service Law to strengthen the oversight and enforcement mechanisms available to the Public Service Commission (PSC). The enactment of Public Service Law §65(15) requires that the CEO of any combination gas and electric corporation certify annually that the corporation has internal controls, policies, and procedures designed to ensure compliance with Public Service laws and the rules, regulations, orders, and procedures adopted thereto, including the obligation to provide safe and adequate service.

The Company worked with the other combination gas and electric utilities in the State to develop and implement consistent processes to comply with the certification requirement and to develop uniform language for the certifications used by each utility. Representatives from the Company and the other utilities reviewed these processes and the certification language with representatives from the General Counsel's Office of the New York State Department of Public Service.

A due diligence process was developed and executed to comply with Public Service Law §65(15). The Company identified the universe of applicable Public Service Law and PSC requirements and assigned the identified requirements to each applicable department. Each department then inventoried and linked each of those requirements to the corresponding Company controls, policies, and/or procedures. The CEO Certification Project Team was formed to manage the conduct of this due diligence process, including the annual maintenance and review of the inventory of requirements and the corresponding controls, policies or procedures.

In January 2015, the Company formed a Compliance Management department with the mission to lead the regulated businesses of Consolidated Edison, Inc. to maintain compliance with statutory and regulatory requirements through effective communication, documentation, monitoring, training, change

management, and policy implementation. In June 2015, the CEO Certification Project was placed under the supervision of Compliance Management.

The Purpose of this project is to increase the awareness of Internal Audit and QA groups of the PSC requirements and associated policies, procedures and controls that may be within the scope of planned reviews, and put in place a process so that results of audits and reviews are communicated to CEO Certification Project Team Members so matrices may be updated, as necessary and appropriate. Additionally, a risk-based methodology for prioritization should be applied to reviews of those policies, procedures and controls.

A survey was conducted of Internal Audit and each QA group. It was determined that some QA groups include their department's CEO Certification Team Member(s) while others have a QA group separate from the CEO Certification Team Member(s). A few groups already have implemented the structure requested in these recommendations and some groups already use a risk-based prioritization process to plan and schedule reviews of their department's processes. The Work Plan and chart in the Deliverables/Milestones section shows how the Company will implement plans to address the recommendations in a uniform manner across the Company.

Work Plan:

In Internal Audit and all QA groups, when a review is planned, the reviewer will conduct a search of the applicable department's CEO Certification Matrices to see if any PSC requirements and corresponding controls, policies and procedures fall into the scope of the planned review and determine which, if any, will be tested within the review. The resulting report will be distributed to the relevant CEO Certification Team Member to ensure that any new or modified controls, policies or procedures resulting from the results of the review are added to the Matrix as necessary. Departments that do not currently have procedures for these processes will augment current procedures or draft procedures to delineate and implement these processes.

Compliance Management will train the groups about how to review the CEO Certification Matrices and other facets of the CEO Certification Program as requested. Compliance Management will develop a risk-based approach that sets priority and appropriate level of evaluation for CEO Certification requirements and the corresponding controls, policies and procedures.

Deliverables/Milestones:

Deliverable/Milestone	Start Date	Delivery Date	Comments
Update Audit Planning documentation and procedures	May 10, 2016	September 30, 2016	Complete
Draft/Update/Approve relevant departmental procedures and communicate changes	June 1, 2016	December 31, 2016	Complete
Compliance Management to develop a risk-based approach that sets priority and appropriate level of evaluation for requirements and controls	May 13, 2016	December 31, 2016	Complete

Cost Benefit Analysis:

The estimated cost is approximately \$67,000. The project will be completed with in-house resources, estimated to require 950 hours at approximately \$70 per hour.

The benefits of implementing this recommendation include developing a consistent process for communication of audit findings and quality assurance recommendations where PSC requirements are part of the scope of such reviews. Other benefits may include improved policies, procedures, and processes resulting from such findings and recommendations.

Risk Analysis:

N/A

February 13, 2017 Update:

This recommendation is complete.

The Company has updated the Audit Planning Section within the Audit Manual and its' auditing planning documents and procedures to determine during the development of each audit scope whether any CEO certification obligations are identified or impacted. Upon finding a PSC obligation within the scope of an audit, they flag that item in their audit report and send a copy of the report to Compliance Management for routing to the appropriate CEO Certification Team Member(s).

The Company has drafted new or updated Quality Assurance (QA) procedures to determine in each review whether any CEO certification obligations are identified or impacted. These policies include communication between QA groups and CEO Certification Team Members so that the Team Members are aware of any findings that may affect PSC obligations and controls.

Compliance Management has developed a risk-based approach to all of the Company's compliance obligations, including those of the PSC, and has deployed an assessment for the Company to use to evaluate a number of compliance concerns, including regulations and controls.

June 13, 2017 Update:

This recommendation is complete and is pending Staff review and closeout.

October 13, 2017 Update:

This recommendation is complete and is pending Staff review and closeout.

IV. System Planning

Recommendation Number 6: IV-2

Recommendation: Develop and implement the capital program optimization model across both companies and organizational units in a consistent manner.

- Clarify the role and responsibilities of the “project sponsor” – as the individual and organizational unit requesting and justifying the capital project until its completion.
- Strictly enforce the policy that all capital projects including those within capital programs must have completed white papers and individual funding appropriation approvals.
- Prohibit grouping of multiple capital projects (e.g., within programs or of similar characteristics) that undermines the strategic value analysis.
- Improve the alignment of the somewhat idealistic strategic drivers with actual capital project characteristics.
- Integrate the capital program optimization model results with system improvement execution plans (as described in recommendations #1) recognizing schedule and resource limitations.

Roles and Responsibilities:

Executive Sponsor: Scott Sanders, Frank Peverly
Team Lead(s): Frank LaRocca, Gary Windman

Scope: Project Purpose, Objectives, and Assumptions:

Scope/Purpose:

The Company will continue to develop and implement the capital program optimization model across both companies and organizational units in a consistent manner at CECONY and O&R.

Capital Portfolio Optimization at CECONY and O&R is performed through the use of the Portfolio Intelligence 360 (PI360) system. Capital optimization is the process that aligns and ranks proposed capital projects to best fit CECONY and O&R strategic objectives. Nine corporate strategic drivers are used to rank the projects within each Company’s portfolio. Once the capital optimization process is complete, each Company’s Capital Governance Committee reviews and approves the results, which are then incorporated into the corporate budgeting process.

Objectives:

By mid-2017, in addition to documenting the as-is and to-be optimization process, the project will clarify the role and responsibilities of the Project Sponsor, define tiering, and outline clear guidance for when a white paper is necessary and the requirements for individual funding appropriation approvals. The project will also review and validate the current corporate strategic drivers and, if necessary, document a proposal for any potential updates. A communication and change management plan will be developed to roll out any new or updated process improvements, enterprise-wide.

Assumptions:

- Key SMEs (EPMO/O&R Cost Management/PMO) will develop the guidelines
- SMEs will be available as needed to support the project, in a timely manner
- The guidance documents developed will apply to both CECONY and O&R and will be consistently applied
- Funds for training and adoption and/or other funding needs (such as PI360 system enhancements) will be obtained as required
- Any changes needed to PI360 (the tool used for capital optimization process) will be simple and can be completed in-house

Work Plan:

The team will document any differences between the CECONY and O&R optimization processes and make recommendations. The team will develop a guidance document for the capital optimization process. The team will review CECONY Corporate Instruction, CI-610-1 and O&R CB-1 Procedure, for consistency, and will make recommendations for improvements, as needed. The team will review and validate the current strategic driver impact statements and, dependent upon the outcome of the review, will document a proposal for any potential updates.

The team will explore better use of tiering to support strategic value analysis. The team will ensure that clear guidance is given on how projects and programs are properly appropriated and funded, and when white papers are required for specific capital projects and programs.

The team will communicate the guidance and any changes enterprise-wide.

Additionally, the following recommendation will be moved into the scope of recommendation IV-1, as it is more aligned with the objectives of that recommendation:

- Integrate the capital program optimization model results with system improvement execution plans (as described in recommendations #1) recognizing schedule and resource limitations.

The team will meet on a scheduled basis to complete the project.

Approvals of all key documents and/or process changes will be provided by the Team Leads and Executive Sponsors of this work stream.

Deliverables/Milestones:

Deliverable/Milestone	Start Date	Delivery Date	Comments
Planning & Current State Analysis	June 1, 2016	December 31, 2016	
Establish team	June 1, 2016	July 1, 2016	Complete
Identify key stakeholders	June 1, 2016	July 1, 2016	Complete
Review Current CI-610-1 and CB-1 Procedures, and any other optimization process/guidance docs	July 1, 2016	September 30, 2016	Complete

Interview EPMO and O&R Cost Mgmt/PMO on current state of capital optimization process	July 1, 2016	September 30, 2016	Complete
Document "As-Is" Process and any differences between CECONY and O&R	August 1, 2016	October 31, 2016	Complete
Document recommendations to close any gaps on differences	October 15, 2016	December 31, 2016	Complete
Strategic Driver Impact Statement Review	September 1, 2016	March 31, 2017	
Review and Validate Impact Statements – hold working sessions, finalize and confirm	September 1, 2016	March 1, 2017	Complete
If necessary, document proposal for update to impact statements	March 1, 2017	March 31, 2017	Complete
Document Consistent Procedures/Guidance	November 2, 2016	March 6, 2017	
Define Project Sponsor and input definition into PI360 system	November 2, 2016	December 31, 2016	Complete
Define and Document "Tiering"	November 2, 2016	December 31, 2016	Complete
Draft Capital Optimization Guidance Document(s)	November 2, 2016	December 31, 2016	Complete
Obtain input and approval on above documentation/guidance from key stakeholders	January 3, 2017	February 15, 2017	Complete
Finalize above documentation/guidance	February 16, 2017	March 3, 2017	Complete
Deliver/Implement Guidance Document to be used by CECONY and O&R	March 6, 2017	March 6, 2017	Complete
Communication / Change Management Planning	September 1, 2016	March 31, 2017	
Develop change/ communication management plan (iterative process)	September 1, 2016	February 28, 2017	Complete
Implement change/ communication management plan	March 7, 2017	March 31, 2017	Complete

Cost Benefit Analysis:

The estimated cost is approximately \$62,500. The project work will be completed with in-house resources. It is estimated that those resources will spend a total of 1,040 hours at approximately \$60.00 per hour to complete this recommendation.

A corporately aligned capital optimization process will improve the business planning cycle and result in a portfolio of projects that better supports the corporate strategic objectives.

Risk Analysis:

The Company will complete this review and look to further develop its existing capital optimization process in an effort to avoid capital expenditures that offer less earned value/effectiveness for the overall program because:

- Lower value projects are executed
- Higher value projects are delayed
- Higher capital budgets are required for the equivalent earned value

February 13, 2017 Update:

The first steps of the implementation plan were to establish the working team and to identify key stakeholders throughout the Company to provide input for implementing this recommendation. The team reviewed all relevant existing procedures and guidance documents. The team has worked to document the existing Capital Optimization Processes at CECONY and O&R by interviewing employees of CECONY's Enterprise Project Management Office and O&R's Financial Services and Project Management Office. Next, the team documented the differences between both processes and worked to close the gaps on those differences. The team has drafted a future state Capital Optimization Guidance Document that will be used at both CECONY and O&R. Furthermore, the team has met with each operating area to review the impact statements and is compiling all of the recommended changes to be reviewed by all parties involved. The team will continue to refine the future state Capital Optimization Guidance Document with the goal of using the guidance document during the 2017 Capital Optimization Process.

June 13, 2017 Update:

This recommendation is complete.

The team finished the review of the Impact Statements and updated them accordingly. The Capital Optimization Guidance Document was finalized and published for use in the 2017 Capital Optimization Process during the first week of March.

October 13, 2017 Update:

This recommendation is complete and is pending Staff review and closeout.

Recommendation Number 7: IV-3

Recommendation: Develop a CECONY comprehensive secondary electric network asset management plan. An asset management plan is in its most simple terms is a business approach intended to align the financial management of assets to corporate goals. Performance goals should change into the future, representing improvements in overall asset condition. Integral to this plan are the following:

- Establishment of performance goals. Goals must be tangible and serve as a realistic indicator of overall system condition and financial performance. Typical goals could include:
 - Meeting Frequency and Network Outage Durations
 - Limiting equipment failures to a certain number annually
 - Extending equipment life expectancy through enhanced O&M activities
 - Completing all planned work within budget
- Analysis of risk to determine most critical system issues.
 - Data collection – CECONY should develop a database of the components to the asset
 - System assessment – an assessment of asset components including age, maintenance records and industry trends
 - Determination of risk – Based on the system assessment identify highest risk in maintaining operations and reliability
- Development of strategies to mitigate risk. CECONY must develop tactical strategies for both asset replacement and operating and maintenance practices that address:
 - Aging infrastructure – the CECONY asset is aging faster than equipment can be replaced
 - Limited growth – revenue and rate of return is limited to the existing rate base.
 - Limited resources – a limit on how much capital can be directed toward this business unit and how much rates can be increased.
- Implementation Plan – long-term plan with annual projects and programs and expected results.
- Evaluation of Progress – comparison of past year's performance against goals. It is important to recognize that performance is indeed a vision and should be tracked over time and evaluated for achievability.
- Collaboration – limited growth and aging infrastructure is a challenge in many areas of the North East. Establishing a working group with other utilities with similar challenges may provide opportunities to advance this issue.

Roles and Responsibilities:

Executive Sponsor: Patrick McHugh
Team Lead(s): Joseph Lenge

Scope: Project Purpose, Objectives, and Assumptions:

The background for this recommendation was the recognition that approximately half of the \$17 billion book value of assets in CECONY's electric distribution system is associated with underground infrastructure, and that CECONY faces increasing pressure from three factors: limited growth, aging infrastructure, and changing regulatory requirements. System reliability is dependent in part on the secondary distribution network, which in recent years has seen performance problems in terms of customer interruption frequency, duration, and cable failures. The number of manhole events, which are driven by secondary cable insulation failures, has increased each year since 2013. In addition, corrosion is still by far the main driver of network transformer failures on the distribution system. While this increase in activity can be for the most part attributed to higher than average snowfall and therefore, higher than average corrosive road salt spread, these trends may continue due to predicted changes in weather norms in our service territory. Developing a secondary distribution network asset management plan provides resources for CECONY to address secondary system performance.

The main power delivery assets of the secondary distribution network system include the following:

- The network transformers and their attached network protectors, most of which are submersible as a result of storm hardening efforts following Superstorm Sandy.
- The secondary cable and associated splices and connectors; the cables, also known as "mains", comprise the interconnected "grid" and extend between transformer vaults.

The scope for the development of an asset management plan for secondary network assets will focus on the assets listed above. The activities include installation, inspection, maintenance, repair, upgrade, and replacement of these facilities.

While the scope of this project will address the secondary power delivery assets mentioned above, some of the key modeling decisions and recommendations may also impact the associated civil structures that contain these assets. These civil structures, such as vaults, conduits, and structures, will only be included to the extent that they are addressed as causes of failure in the targeted assets or affected by asset management decisions related to the network transformer, network protector, and secondary mains asset classes.

Component assets of the various distribution monitoring systems, including meters, Remote Monitoring System (RMS), stray voltage detection equipment, and any other sensors, will not have an asset management plan developed for those components; however, the data provided via these components will be utilized in the secondary network asset models that will be created.

Since primary assets making up the primary distribution system have already been managed through previous work done with network reliability index (NRI) modeling, they will not be included with the asset classes involved in this recommendation.

While the scope of the project is limited as stated above, the project to develop a CECONY secondary electric network asset management plan will involve coordination of many different existing projects, plans, and initiatives, that themselves are not part of the scope of the plan.

Work Plan:

The development of an asset management plan for the secondary network can best be seen as the development of three separate but integrated plans for separate groups of assets:

- Network transformers²
- Network protectors
- Secondary mains

The plan is for the Distribution Engineering Asset Management (DEAM) group to work on two of the three asset management plans in parallel starting in 2017, with two teams addressing network transformers and network protectors in 2017, and a joint team addressing secondary mains in 2018.

Within each of the three asset classes, a key activity of the plan will be to build a base of intellectual capital. This will include known causal relationships, previous studies, best practices of other utilities, and interviewing specialized subject matter experts inside and outside of the Company. It will also include meetings/communication with SMEs, documenting results, and establishing a data storage mechanism that is readily accessible for the use of relevant employees.

Once the asset models are ready, the gathering and compiling of this asset-specific intellectual capital will be the first major activity within each year of the work plan. This will then serve as a foundation for the final major activity (to be worked concurrently with the above activity for several months) within each year of the work plan. Specifically, this major activity involves the creation of the asset-specific decision analytic models that will use the intellectual capital to inform CECONY's asset management strategy. Training and procedures will be developed that explain how the models are developed, maintained and utilized. The procedures will identify how the models are updated, who is responsible for updating them, and the frequency of updates. The procedures will also explain how the information output of the model is to be used in the decision making process, including budgeting, work planning, and program development. Factoring the information into annual load relief planning, annual reliability planning and long range planning efforts will be integrated into both the procedures and the associated training.

The planned decision analytic models will include the ability to forecast performance of the secondary distribution system for the asset classes modeled under different scenarios of investment, provide

² Within the network transformer plan, it will be evaluated whether a distinction between street network vaults and spot network vaults is necessary.

recommendations for specification changes, and provide alternatives for inspection and maintenance practices. The performance of the system will be modeled in terms of predicted equipment failures of various types, including faults, burnouts, smoke/fire/explosions in manholes, ducts, and vaults where the equipment resides, 'stray voltage' events (energized structures), and possibly other environmental factors. The decision analyses will involve modeling the consequences of recommendations while factoring in system performance variables. Risk will be accounted for via the range of possible maintenance and replacement strategies that will affect the life cycles of the different asset classes and via the estimated impact these strategies will have on different system performance variables (such as the manhole events and stray voltage events mentioned previously). Finally, the evaluation of the strategies will be based on the cost-effectiveness of alternatives as modeled – achieving the strategy that will maximize risk reduction versus cost – while using an appropriate life-cycle framework that will incorporate not only initial costs, but also future costs.

Deliverables/Milestones:

Deliverable/Milestone	Start Date	Delivery Date	Comments
Network transformer/network protector asset modeling project kick-off meeting	January 9, 2017	January 31, 2017	Complete
Develop network transformer/network protector intellectual capital repository	January 9, 2017	July 31, 2017	Complete
Develop network transformer/network protector decision analytic model, including training and procedures for maintenance and use	March 6, 2017	December 29, 2017	
Secondary mains asset modeling project kick-off meeting	January 8, 2018	January 31, 2018	Complete
Develop secondary mains intellectual capital repository	January 8, 2018	July 31, 2018	
Develop secondary mains decision analytic model, including training and procedures for maintenance and use	March 5, 2018	December 31, 2018	

Prior to the release of the audit recommendations, the DEAM group had already committed to CECONY upper management to develop decision analytic models for poles and direct buried cables by the end of 2016. These models will be utilized as templates for the new asset class models listed in the table above. As a result, work on the deliverables will begin in January 2017.

Cost Benefit Analysis:

The costs associated with this project will be primarily driven by the following labor costs:

- Two CECONY management employees
- One full-time contractor or an additional CECONY employee assigned to the DEAM group; and,
- O'Neill Management Consulting, a leader in the utility asset and risk management space.

Currently, the Asset Management team has three employees; two management employees and one contractor. The consultant may at any given time have one to three employees working on its behalf. The majority of the team members' time will be spent working on this project which will take two years to implement. The initial cost estimate is between \$500K and \$1M. Additional server capacity will be needed and is projected to cost approximately \$250,000. The team does not currently foresee any other significant equipment costs associated with implementing this project.

The potential benefit that can be gained from this project will be a reduction in spend in specific capital programs – specifically the secondary open mains, underground secondary reliability, transformer installation, and transformer purchase programs – associated with secondary network systems where an asset management approach can lead to more efficient spending based upon more tangible program goals and objectives. CECONY spends \$350M annually on these programs.

Risk Analysis:

The risk of carrying out this recommendation is that there may not be any perceived improvement in secondary system performance even though substantial amounts of time and effort will be dedicated to this initiative. This is because there is still no reliable method to normalize the data, since the majority of secondary failures are driven by weather patterns and external factors (such as salt for manhole events & transformer corrosion and manufacturing defects for network transformers and protectors) where the Company has limited control. In addition, the current lack of telemetry downstream of the network transformer prevents CECONY from identifying incipient secondary cable failures prior to failure, thereby limiting CECONY's targeted replacement strategy.

The risk of not implementing this recommendation is that CECONY may miss an opportunity to realize savings and develop a more coherent, integrated approach to the spending and activities associated with the key assets of the secondary network.

February 13, 2017 Update:

Distribution Engineering Asset Management Group began working on asset class models for the secondary system beginning in 2017. The Project Charter has been created and approved by the Work Stream Sponsor, VP of Engineering and Planning on December 12, 2016. A project kick-off meeting was held on January 10, 2017 and addressed creating asset class models for network transformers and network protectors. The Asset Management Group will be working with Dan O'Neill, a utility industry consultant and SME in this field from O'Neill Management Consulting.

June 13, 2017 Update:

Distribution Engineering is currently on schedule to meet the next milestone of building an intellectual capital repository for network transformer and network protectors by July 31, 2017.

Since the February 2017 Update to Staff, the team has met with multiple stakeholders is in the process of analyzing the collected data to identify known causal relationships, and establish a data storage mechanism that is readily-accessible for relevant employees.

The first stakeholder meeting took place with the Distribution Equipment Group on February 1st. A follow-up on March 6th occurred where the team was able to extract initial data from Property Records System.

Further meetings took place with the same group on March 27th and on April 12th to analyze the extracted data and to identify any related and/or impacted systems (i.e. data was collected from systems such as DEMS, Field Return Data, Master Transformer Sheet, etc.)

In addition to interviewing specialized SMEs inside the Company, the team has also identified and collected previous studies and best practices of other utilities, and is scheduled to meet with manufacturing SMEs in June where the outcome will be part of the overall input towards the intellectual capital repository and the asset class models for network transformers and network protectors.

October 13, 2017 Update:

Distribution Engineering is currently on schedule to meet the next milestone of creating an analytic model of Network Transformers and Network Protectors by December 29, 2017.

Since the last update, the team has met with multiple stakeholders , and has analyzed the collected data to identify known causal relationships and also to establish a data storage mechanism that is readily-accessible for relevant employees. A project milestone of creating network transformer and network protector intellectual capital repository was completed on July 27, 2017.

The project continues on pace. The kick-off meeting for Secondary Open Mains intellectual capital repository was held on August 4th, 2017 and draft presentations on the Network Transformer and Network Protector Analytic Model have been constructed. The team is hosting final consultation sessions with the subject matter experts, specifically in regard to the health index for network transformer and network protector equipment and will have the health index finalized by end of October.

Recommendation Number 9: IV-5

Recommendation: Improve competitive procurement levels to reacquire and exceed previous levels of performance.

- Edit and modify procurement policies and procedures to establish a stronger competitive bias.
- Increase approval levels for any non-competitive transactions.
- Competitively re-bid contracts or formally re-confirm competitive basis instead of providing funding extensions and renewals.
- Perform a verifiable benchmarking study of large utility purchasing functions to establish best in class performance levels. Use this information to establish competitive metrics for future competitive performance goals.
- Adopt competitive procurement KPIs to balance the current transaction processing time KPIs.
- Develop an improved competitive approach to contractors, their geographic coverage and staggered strategy for multi-year procurement contracts.
- Remove end-users from participation in the selection of multiple service providers for similar services or provide specific guidelines to be followed and report these results to senior management.
- Revise purchasing analytical processes to improve performance reporting clarity and consistency, reduce variations in terminology, and provide greater corporate attention to competition.
- Formally commit to a timetable for reacquiring competitive procurement levels previously demonstrated. Report improvement progress to the DPS on a quarterly frequency until these levels are reached.

Roles and Responsibilities:

Executive Sponsor: Michael Haggerty
Team Lead(s): Michael Graham

Scope: Project Purpose, Objectives, and Assumptions:

The purpose of this plan is to identify areas of improvement that will lead to increased competitive procurement levels. As outlined below, Supply Chain will complete a verifiable benchmark with other large utilities and organizations of similar size and scope, establish definitions for competitive bidding, and modify internal policies and processes. The processes and policies implemented will be designed to maximize the value of the procurement process, clarify objectives for our internal customers, and develop working partnerships.

The benchmarking findings will help drive the policies and procedures, as well as additional factors such as the development of complementary KPIs to cycle time, modified definitions, reports, and dashboards. Senior management will be involved in the approval and communication of these refined procedures and processes.

Work Plan:

Sub-teams will be created to:

- Modify and strengthen the understanding of competitive vs. non-competitive bidding
- Identify an approach to increase approval levels for non-competitive procurements
- Competitively re-bid contracts or formally re-confirm competitive basis instead of providing funding extensions and renewals
- Perform a verifiable benchmarking study of large utility purchasing functions to establish best in class performance levels
- Develop appropriate competitive metrics
- Develop an improved competitive approach to contractors, their geographic coverage and staggered strategy for multi-year procurement contracts
- Remove end-users from participation in the selection of multiple-service-providers for similar services or provide specific guidelines to be followed and report these results to senior management
- Identify, review, and modify all relevant Supply Chain Operating Procedures (SCOPs) and Corporate Instructions (CIs)

Deliverables/Milestones:

A - Edit & modify procurement policies and procedures to establish a stronger competitive bias.

Deliverable/Milestone	Start Date	Delivery Date	Comments
Defined Terminology for Competition	June 20, 2016	July 30, 2016	Complete
Drafted/Approved SCOPs/CIs	June 20, 2016	March 31, 2017	Complete
Communication & Training Seminars on SCOPs/CIs	January 3, 2017	March 31, 2017	Complete

B - Increase approval levels for non-competitive transactions.

Deliverable/Milestone	Start Date	Delivery Date	Comments
Evaluation of Process Change Options	June 20, 2016	August 31, 2016	Complete
Drafted/ Approved SCOPs/CIs	September 1, 2016	March 31, 2017	Complete
Communication & Training Seminars on SCOPs/CIs	January 3, 2017	March 31, 2017	Complete

C - Competitively re-bid contracts or formally re-confirm competitive basis instead of providing funding extensions and renewals.

Deliverable/Milestone	Start Date	Delivery Date	Comments
Evaluation of Process Change	June 20, 2016	October 31, 2016	Complete
Drafted/ Approved SCOPs/CIs	June 20, 2016	March 31, 2017	Complete
Communication & Training Seminars on SCOPs/CIs	January 3, 2017	March 31, 2017	Complete

D - Perform a verifiable benchmarking study of large utility purchasing functions to establish best in class performance levels. Use information to establish appropriate competitive metrics for future performance.

Deliverable/Milestone	Start Date	Delivery Date	Comments
Draft and Finalize Benchmark Survey	June 20, 2016	August 31, 2016	Complete
Aggregate and Analyze Survey Results	September 1, 2016	November 15, 2016	Complete
Develop Competitive Metrics and adopt for performance measurement for calendar year 2017	November 1, 2016	January 31, 2017	Complete

E - Adopt competitive procurement KPIs to balance the current-transaction-processing-time KPIs.

Deliverable/Milestone	Start Date	Delivery Date	Comments
Evaluate KPI Options	June 20, 2016	July 31, 2016	Complete
Communicate Options to Internal Stakeholders	August 1, 2016	October 31, 2016	Complete
Adopt KPI(s) for 2017	August 1, 2016	December 31, 2016	Complete

F - Develop an improved competitive approach to contractors, their geographic coverage and staggered strategy for multi-year procurement contracts.

Deliverable/Milestone	Start Date	Delivery Date	Comments
Select 3 rd party supplier to help develop the approach	June 20, 2016	September 1, 2016	Complete
Finalize and Implement Strategic Plan with the Supplier and Stakeholders	September 1, 2016	June 30, 2017	Complete
Drafted/Approved SCOPs/CIs	March 1, 2017	June 30, 2017	Complete
Communication & Training Seminars on SCOPs/CIs	March 1, 2017	June 30, 2017	Complete

G - Remove end-users from participation in the selection of multiple-service-providers for similar services or provide specific guidelines to be followed and report these results to senior management.

Deliverable/Milestone	Start Date	Delivery Date	Comments
Evaluation of Process Change Options	June 20, 2016	September 30, 2016	Complete
Drafted/Approved SCOPs/CIs	September 15, 2016	March 31, 2017	Complete
SCOP Training Seminars/Communication for Procurement	January 3, 2017	March 31, 2017	Complete

H - Revise purchasing analytical processes to improve performance reporting clarity and consistency, reduce variations in terminology, and provide greater corporate attention to competition.

Deliverable/Milestone	Start Date	Delivery Date	Comments
Create a Glossary of Supply Chain Terminology	July 1, 2016	August 31, 2016	Complete
Develop and Implement Dashboards/Reports	August 1, 2016	November 15, 2016	Complete

I - Formally commit to a timetable for reacquiring competitive procurement levels previously demonstrated. Report improvement progress to the DPS on a quarterly frequency until these levels are reached.

Deliverable/Milestone	Start Date	Delivery Date	Comments
Reacquire Competitive Procurement Levels	January 1, 2016	May 31, 2016	Complete

Cost Benefit Analysis:

As indicated in Recommendation I, Supply Chain has re-achieved competitive levels of 86% as of May 31st, 2016. Therefore, no additional savings will be achieved.

The estimated cost is approximately \$990,250. The project will be completed with in-house resources, estimated to require 10,725 hours at approximately \$50.00 per hour, and external forces for benchmarking purposes estimated at \$454,000. The actual cost of the external forces used for benchmarking will be determined after the selection of the vendor.

Risk Analysis:

If this plan is not implemented, potential savings may be unrealized and competitive procurement levels may not be sustained.

February 13, 2017 Update:

Supply Chain continues its efforts to satisfy the nine sub-recommendations and achieve the overall goal of increasing and sustaining competition in the procurement process. Competitive spend levels that were referenced in the audit from April 2016 were reacquired in May 2016 and have been sustained to date. Supply Chain's implementation plan can be summarized by three themes – benchmarking, data management and process changes. By conducting a benchmarking study, Supply Chain identified industry best practices, some of which were already in place. Dashboards were designed to communicate various data related to overall spend and non-competitive/ sole-source agreements. Process improvements and procedural changes were also completed to support this effort, and they continue to be communicated across the Company.

A - Edit & modify procurement policies and procedures to establish a stronger competitive bias:

Supply Chain has revised multiple procedures to address competitive, non-competitive, and sole-source procurements. These revisions were based on information gathered through a benchmark study conducted with other like-sized utilities and governmental agencies.

B - Increase approval levels for non-competitive transactions:

Supply Chain initially proposed increasing approval levels and developing a committee/conference approach for non-competitive and sole-source procurements. After additional review and discussions with leadership across the Company, the plan was modified to require additional rigor and market analysis to all non-competitive/sole-source requests.

Procedural changes to support the new requirements have been identified and are in the process of being finalized.

C - Competitively re-bid contracts or formally re-confirm competitive basis instead of providing funding extensions and renewals:

Supply Chain drafted three options to address re-bidding or reconfirming competition. These options were compared to the findings from the utility benchmarking study (sub-recommendation D). The benchmarking showed that the Company's processes for approving funding increases and time extensions are more rigorous than most utility peers. Some opportunities for improvement were identified, and Supply Chain is currently modifying existing procedures to require a market analysis and re-evaluation of contract pricing should an extension exceed six months. Once finalized, these revisions will be communicated to the procurement team.

D - Perform a verifiable benchmarking study of large utility purchasing functions to establish best in class performance levels. Use information to establish appropriate competitive metrics for future performance:

Supply Chain surveyed a group of 25 like-size utility companies identified through Con Edison's relationships with PA Consulting, Electric Utility Benchmarking Association (EUBA), and Utility Procurement Management Group (UMPG). Of the 25 companies, 13 responded to our request to participate. The survey targeted the following five areas: 1) definitions of competitive, single and sole-source spend 2) contract approval levels 3) competitive bidding requirements 4) contract extensions and 5) performance metrics.

Survey results provided insight and actions based on the following categories:

Best-in-class

- Con Edison's current process for extension approvals exceeds what was found to be standard practice

Industry aligned

- Con Edison's current contract approval levels are consistent with the majority of the respondents

Opportunities for improvement

- A clearer set of definitions for sole-source, non-competitive, and competitive procurements should be integrated into Con Edison's procedures (COMPLETED)
- Standardization of a sole-source/ non-competitive justification document

Based on these results, Supply Chain determined that a second set of metrics, in addition to the metrics developed as part of sub-recommendation E, would be redundant. The metrics developed for sub-recommendation E will help to effectively manage the procurement process.

E - Adopt competitive procurement KPIs to balance the current-transaction-processing-time KPIs:

Supply Chain initially developed three options for adopting KPIs related to competitive procurements. However, rather than implement them, Supply Chain will partner with various organizations across the Company to develop and execute a programmatic approach to manage competitive procurements in 2017. This program will explore competitive procurement opportunities that will be supported with a series of competitive spend metrics.

At the end of 2017, this approach will be reevaluated to determine its effectiveness and if there is a need to adopt a KPI related to competitive procurements.

F - Develop an improved competitive approach to contractors, their geographic coverage and staggered strategy for multi-year procurement contracts:

Supply Chain engaged a third party to review three practices associated with category management. They include: 1) contracts awarded based on geography 2) contracts with staggered end dates and 3) multiple awards for the same service. Supply Chain underwent a competitive process and selected Accenture to conduct the review. In addition, Supply Chain will leverage this opportunity to implement a category management strategy for the department. Accenture's work is in progress and it is on target to meet the established deadline.

G - Remove end-users from participation in the selection of multiple-service-providers for similar services or provide specific guidelines to be followed and report these results to senior management:

Supply Chain is creating guidelines to effectively manage agreements that involve multiple-service-providers. This will include communicating guidelines to end-users and evaluating reporting methods to track progress. Procedural edits related to multiple-service-providers for similar services have also been identified and are in the process of being finalized.

H - Revise purchasing analytical processes to improve performance reporting clarity and consistency, reduce variations in terminology, and provide greater corporate attention to competition:

In late 2016, Supply Chain launched a series of dashboards and reports for the major organizations across the Company. These dashboards display total spend, spend on non-competitive/ sole-source agreements, trends over time, as well as other data points. Supply Chain also standardized key terms, which correspond to the data in the dashboards and reports.

I - Formally commit to a timetable for reacquiring competitive procurement levels previously demonstrated. Report improvement progress to the DPS on a quarterly frequency until these levels are reached:

Supply Chain reacquired the specified competitive procurement level of 86% in May 2016 and has sustained this percentage.

June 13, 2017 Update:

Supply Chain has completed eight of the nine sub-recommendations detailed in Northstar's report.. Since the February 2017 update, Supply Chain has completed 4 sub-recommendations. Detailed below is a description of the work performed on these 4 sub-recommendations as well as the status of the one open sub-recommendation.

A - Edit & modify procurement policies and procedures to establish a stronger competitive bias.

This sub-recommendation is complete.

The procedural changes referenced in the February 2017 update have been completed. Supply Chain revised multiple procedures to address competitive, non-competitive, and sole-source procurements, and conducted seminars to all procurement specialists regarding key changes. The changes continue to be communicated across the Company.

B - Increase approval levels for non-competitive transactions.

This sub-recommendation is complete.

The additional requirements for sole-source/non-competitive justifications have been finalized and should include:

- Background information on the proposed non-competitive or sole-source procurement and the need it fulfills for the Company;

- Market analysis including the top competitors of the intended supplier and their respective market shares (user organizations may liaise with Supply Chain to obtain the most recently published annual market data);
- Plan to make future versions of the procurement competitive;
- Risk analysis (e.g. financial statements) including specific action steps user organizations will take to replace the intended supplier should the supplier exit the market, and the expected cost to the Company.

These requirements were approved, and communicated as part of Supply Chain Operating Procedure (SCOP) *Procurement Decisions 301* in seminars for the procurement specialists prior to the March 31st deadline.

C - Competitively re-bid contracts or formally re-confirm competitive basis instead of providing funding extensions and renewals.

This sub-recommendation is complete.

As referenced in the February 2017 update, Supply Chain drafted three options to address re-bidding or reconfirming competition. Supply Chain selected the option to modify the existing procedure, *SCOP 13 Contract and Standard Purchase Order Modifications*, to require a market analysis and re-evaluation of contract pricing should an extension exceed six months. These requirements were approved and communicated in seminars for the procurement specialists prior to the March 31, 2017 deadline.

F - Develop an improved competitive approach to contractors, their geographic coverage and staggered strategy for multi-year procurement contracts.

The last outstanding deliverable to this implementation plan is the category management pilot program, which addresses staggered contracts and geographic coverage. Supply Chain and Accenture conducted analyses for three categories - paving/restoration, gas mains/services, and environmental services. As part of this effort, the team conducted customer interviews, supplier interviews, and negotiation sessions. The tools used to support the effort include procedures, communication, and training. These three deliverables are in progress, and they are on target to meet the June 30, 2017 deadline.

G - Remove end-users from participation in the selection of multiple-service-providers for similar services or provide specific guidelines to be followed and report these results to senior management.

This sub-recommendation is complete.

Supply Chain completed the guidelines for internal customers to effectively manage procurements that result in awards to multiple-service-providers for the same service. They are approved and documented in *SCOP 307 Contract Management and Renewal*. These guidelines were reviewed with end-users, and reporting methods have been identified to track progress. These requirements were communicated in seminars for the procurement specialists prior to the March 31, 2017 deadline.

October 13, 2017 Update:

This recommendation is complete.

Supply Chain has completed all nine sub-recommendations detailed in Northstar's report. Since the June 2017 update, Supply Chain has completed the final sub-recommendation - F. Detailed below is the summary.

F - Develop an improved competitive approach to contractors, their geographic coverage and staggered strategy for multi-year procurement contracts.

This sub-recommendation is complete.

The last outstanding deliverable to this implementation plan was the category management pilot program, which addresses staggered contracts and geographic coverage. Supply Chain and Accenture conducted analyses for three categories - paving/restoration, gas mains/services, and environmental services. As part of this effort, the team conducted customer interviews, supplier interviews, and negotiation sessions. The tools used to support the effort included procedures, communication, and training. These three deliverables are completed.

VI. Program and Project Planning and Management

Recommendation Number 10: VI-1

Recommendation: Develop a consistent approach to program and project management throughout CECONY and O&R. Establish and enforce formal project management control procedures, especially regarding instances when CECONY capital projects are transferred between organizations. Establish an organizational unit responsible for standardizing project management practices to accomplish this effort.

- Develop formal, controlled procedures that address:
 - Project management for all projects, both large and small
 - Program management and the responsibilities of program owners
 - Contract change orders and contractor payment verification and processing
 - Development of project estimates, including the determination of contingency amounts.
 - Development of guidelines for the establishment of project schedules and the reporting of progress relative to the schedule.
 - Project Status reporting requirements.
- Develop consistent reporting for programs and projects across the organizations.
- Incorporate a WBS in the development of project/program estimates. Effective cost management begins with estimates that are based on a logical delineation of the project's key components. The WBS provides the structure for estimating and tracking the project cost.
- Standardize monthly CWE reports throughout the organizations and the CWEs to the projects' WBS.

Roles and Responsibilities:

Executive Sponsor: Scott Sanders, Frank Peverly
Team Lead(s): Margaret O'Donoghue, Gary Windman

Scope: Project Purpose, Objectives, and Assumptions:

Scope/Purpose:

The purpose of this project is to document the current state of program and project management throughout CECONY and O&R, design the future state, obtain buy-in from all key stakeholders, roll out consistent guidelines for program and project management, and formalize a new organizational unit to manage the guidelines and maintain the quality of project management going forward. The project will also integrate with the Primavera P6 and PI360 project efforts.

Objectives:

- By the end of 2016, establish an organizational unit responsible for standardizing project management practices to accomplish this effort
- By mid-2017, establish and enforce formal program/project management guidelines

Key Assumptions:

- Key SMEs (stakeholders/operating areas) will be involved in the development of the guidance documents
- SMEs will be available as needed to support the project, in a timely manner
- The guidance documents developed will apply to both CECONY and O&R and will be consistently applied
- Funds for training and adoption and/or other funding needs will be available if required

Key Dependencies:

- Primavera P6 implementation
- PI360 implementation
- Operating areas heavily involved in project management

Work Plan:

The team will analyze the current state and document all policies, procedures, and other documents related to project management related policies, procedures, documents, etc. in a single repository.

At the same time, a new unit will be established to standardize project management practices and ensure quality.

The team will employ a project steering committee for the effort.

The team will integrate with the PI360 project and Primavera P6 project.

Once the assessment of the current state is complete, the team will design the future state and identify the guidelines to be standardized.

Once the guidelines are agreed upon, they will be drafted and approved.

A communication/change management plan will be established to assist in rolling out the new guidelines, and to support adoption.

As part of the unit that is established, a review function will be performed to confirm adherence to the guidelines.

The team will meet regularly to complete the project.

Approvals of all key documents and/or process changes will be provided by the project steering committee, in addition to the Executive Sponsors and Team Leads of this recommendation.

Deliverables/Milestones:

Deliverable/Milestone	Start Date	Delivery Date	Complete
Planning	June 6, 2016	December 31, 2016	
Establish team	June 6, 2016	July 1, 2016	Complete
Identify key stakeholders	July 1, 2016	July 15, 2016	Complete
Establish new organizational unit	June 6, 2016	December 31, 2016	Complete
Current State Analysis	July 18, 2016	October 21, 2016	
Interview key stakeholders on project management procedures and reporting	July 18, 2016	October 21, 2016	Complete
Interview key stakeholders on current use of WBS in the development of project/program estimates	July 18, 2016	October 21, 2016	Complete
Interview key stakeholders on current state of CWE process and reporting	July 18, 2016	October 21, 2016	Complete
Review any existing operating procedures or other documentation	August 15, 2016	October 21, 2016	Complete
Summarize current state findings (incl. reviews)	September 19, 2016	October 21, 2016	Complete
Future State Design	October 24, 2016	May 31, 2017	
Design future state; Identify target project management guidelines to be standardized and document guidance documents	October 24, 2016	February 28, 2017	Complete
Define and document standard use of WBS in estimates	October 24, 2016	February 28, 2017	Complete
Define and document standard use of CWE process and reporting to projects WBS	January 3, 2017	February 28, 2017	Complete
Review and obtain input of standards with key stakeholders	March 1, 2017	May 1, 2017	Complete
Approve and publish standard guidance documents	May 2, 2017	May 31, 2017	Complete
Training and Communication	January 3, 2017	June 1, 2017	
Create change management / communication plan	January 3, 2017	February 28, 2017	Complete
Implement change management/communication plan within organizations	May 2, 2017	June 1, 2017	Complete
P6/PI360 Workstream	July 25, 2016	December 31, 2016	
Agree on standardized approach to P6 across CECONY & O&R	July 25, 2016	December 31, 2016	Complete
Identify any impacts to PI360 implementation	July 25, 2016	December 31, 2016	Complete

Cost Benefit Analysis:

Cost Analysis:

- Resources - An additional 4 FTEs will be required to design, enforce and maintain project management standards across the enterprise, and support the delivery of the scope identified:
 - 4 FTEs at \$150K - \$600K per year
 - Resources to be hired in 4th Quarter 2016
- Portfolio Management System - On PI360 implementation, the Company (O&R and CECONY) spent \$2.3M through 2015, and \$1.8M is projected in 2016. An additional \$3M is planned. There may be additional costs due to any new in scope items as a result of this recommendation
- Project Management System – For the Primavera P6 implementation across all organizational units, the Company (O&R and CECONY) spent \$4.2M through 2015; \$3.1M is projected in 2016
 - Future cost estimates for an enterprise-wide P6 implementation will require a detailed review by IT, and will include costs for software, hardware, integration, maintenance, etc.

Benefit Analysis:

Improved enterprise-wide project management systems and processes, and formal, controlled procedures will provide the following expected benefits:

- Ability to deliver higher portfolio value with the same capital spend, or the ability to deliver the same portfolio value with reduced capital spend
- Projects and available resource capability aligned thereby improving resource utilization/labor cost
- Projects scheduled and executed for the highest impact/lowest risk
- Improved skills assignment
- Improved estimating tools
- Identification and implementation of best-practices and lessons learned thereby improving performance
- Standardized project management methods that shorten the learning curve for other organizational units
- A better basis for transfers of skill sets and resource across organizations thereby reducing training, improving labor costs and overall capability
- Better project management and oversight
- Improved collaboration of team members
- Consistent document control
- Better project cost and schedule control
- Better risk management
- Improved, standardized reporting capabilities for project team and utility management

Improved project management and implementation of lessons learned may also result in the following benefits:

- Improved project schedules – more timely execution of important projects and commercialization
- Improved workforce productivity – reduced labor costs
- Improved budget monitoring – improved cost management and reduced waste

Risk Analysis:

Consistency of project management practices provides better project governance, improved sharing of lessons learned, and enhanced process and resource synergies among the organizations.

February 13, 2017 Update:

The first steps of the implementation plan were to establish the working team and to identify key stakeholders throughout the Company to provide structure for implementing this recommendation. The team has worked to document existing project management procedures and has interviewed key stakeholders within the Company over the past few months on topics such as the use of Work Breakdown Structures (WBS) and the current state of the Current Working Estimate (CWE) process. The Enterprise Program Management Office (EPMO) has been formally established within Business Finance and is working with the Companies internal engineering and operating areas to draft the project management guidelines that were identified as part of the future state. The team will continue to refine these documents and work with the key stakeholders and the steering committee to gain input and concurrence on the content of the guidance documents.

Additionally, EPMO has set up a project management administrations committee, with a mission to create and maintain a standardized approach to Primavera P6 across the Company. EPMO has also concluded that the PI360 implementation will have no impact to the P6 initiative since the P6 solution will focus on the creation and tracking of project schedules while PI360 will continue to focus on portfolio management and financial reporting.

June 13, 2017 Update:

This recommendation is complete.

As part of the future state design, the team began the creation of the Capital Projects Playbook (Playbook). The Playbook is a comprehensive guideline for capital project management at CECONY and O&R. The Playbook establishes a standard enterprise-wide project management framework and it consists of a series of guidelines, each of which provide guidance for a specific project management process or sub-process.

The Playbook has been developed by a multi-disciplinary team comprised of employees across various organizations within CECONY and O&R, and coordinated by the Enterprise Program Management Office (EPMO). It has been reviewed and approved by key stakeholders within the Company. As part of the roll-out, a communication and change management plan was developed and implemented which led up to the June 1st formal roll-out of the Playbook to all affected organizations.

October 13, 2017 Update:

This recommendation is complete and is pending Staff review and closeout.

Recommendation Number 11: VI-2

Recommendation: Charge actual CECONY engineering and construction oversight costs directly to capital projects so the booked capital costs reflect the actual costs of the project.

Roles and Responsibilities:

Executive Sponsor: Mary Kelly, Sanjay Bose, Patrick McHugh, Robert Muccilo, Robert Boyle
Team Lead(s): Tomas Hernandez, Victor Mullin, Stephen Maikisch, Grace Scarpitta, Thomas Poirier

Scope: Project Purpose, Objectives, and Assumptions:

Document the as-is state of the cost allocation process for engineering and construction, perform benchmarking with utilities, engineering firms, and construction companies, and measure the value added by changing to a direct charging model.

Analyze the feasibility of changing to a direct charging model.

Work Plan:

This effort will be pursued in two phases. During the first phase, CECONY will document the as-is state of the cost allocation process, perform benchmarking with utilities, engineering firms, and construction companies, and measure the value added by changing to a direct charging model. The feasibility study will determine whether or not direct charging of engineering and construction costs is indeed a best practice. The study will explore whether direct charging engineering and construction costs is more accurate and efficient, produces more accurate cost accounting for projects, and is a practical and cost effective change. CECONY will then develop an implementation plan based on the results of the feasibility study and will provide a detailed Phase II schedule, if applicable.

In the second phase, CECONY will implement the changes, if any, that are recommended as a result of the first phase.

Deliverables/Milestones:

Deliverable/Milestone	Start Date	Delivery Date	Comments
Phase I:	June 1, 2016	June 30, 2017	
Initiation – Form Team	June 1, 2016	June 30, 2016	Complete
Prepare plan for feasibility study	June 30, 2016	September 30, 2016	Complete
Internal (As – Is) and external benchmarking	June 30, 2016	March 15, 2017	Complete
Define Proposed To-be state	March 1, 2017	May 31, 2017	Complete
Cost/Benefit/Risk analysis of Proposed To-Be State	June 1, 2017	June 30, 2017	Complete

Fact Finding – Feasibility Study	July 1, 2017	July 31, 2017	Complete
Position Paper/analysis	August 1, 2017	August 31, 2017	Complete
Develop Implementation Plan for Phase II	September 1, 2017	October 31, 2017	
Phase II:		TBD	

Cost Benefit Analysis:

The estimated cost of implementation will be determined as part of the feasibility study. The estimated internal cost for the feasibility study is approximately \$126,000. The project will be completed with in-house resources, estimated to require 1,800 hours at approximately \$70.00 per hour, and external forces for benchmarking purposes. The cost of the external forces used for benchmarking will be determined after the selection of the vendor.

Benefits will be determined as part of the feasibility study, however it is expected that the benefits will include having the availability of accounting data that can be analyzed to understand costs and cost drivers which can support the overall planning process as well as the ability to use the data in developing the actual costs of a project.

Risk Analysis:

- Direct charges would capture the cost of the engineers and construction personnel working on a project, but many others are indirectly involved. So direct charging will not lead to a fully accurate allocation of engineering and construction costs
- For short-duration, low-cost projects, the volume of charges may present significant administrative challenges to capture per project direct charge
 - May introduce time delays
 - May not be administratively practical and cost effective

February 13, 2017 Update:

The implementation team embarked on a joint effort benchmarking study with 3 other NorthStar recommendations (Recommendations 11, 19, 20, and 21). The implementation plan for #21 has been deferred to the Liberty Staffing Audit. This allowed the companies to take advantage of synergies and common themes to reduce the cost of hiring an individual contractor to perform each of the external benchmarking studies. This effort began in June 2016 to create the Request for Proposal (RFP) to solicit a consultant to assist in our benchmarking effort. The RFP was submitted on June 29, 2016. The company received proposals from four vendors which were then scored on commercial and financial considerations, operational capabilities, project planning and control, account management and service, and overall presentation from all participating groups. Meetings were held on August 3, 2016 and August 9, 2016 to review and consolidate all scores. The scores were submitted to Supply Chain Management on August 18, 2016 narrowing down the vendors to two choices. Separate interviews were conducted with two remaining vendors on September 8, 2016 to clarify and confirm each vendor understands the deliverables and plans to achieve them. Supply Chain further reviewed the vendors based on pricing and awarded the bid to Ernst and Young on September 23, 2016. Their scope was submitted to the company on September 27, 2016 and submitted to the Law Department. The contract

was finalized on November 7, 2016. The contactor work commenced on November 28, 2016. The original benchmarking effort was scheduled to be done on December 15, 2016 but has been delayed 3 months due to the longer than anticipated time to prepare, review, and award the contract.

In response to NorthStar's Recommendation 11, a team was formed that consists of representatives from each of the commodities, engineering and construction. Since then the team has met regularly to define types of work subject to the Recommendation, evaluate participants in the benchmarking and to evaluate survey questions for benchmarking. This effort continued through December 22, 2016. Ernst and Young finalized the questionnaire with their developer on December 23, 2016, and it was released to participants the week January 9, 2017. As part of benchmarking, "Think Tank" sessions will be held in January 2017 where anonymous, live interaction with the participants will take place allowing for answers to some of the more open-ended questions. The information collected and compiled from this effort will be used to determine the optimal path forward for each of the groups represented on this team.

June 13, 2017 Update:

In April 2017, the implementation team received and reviewed the joint benchmarking study that was done in conjunction with 3 other NorthStar recommendations (Recommendations 19, 20, and 21) and shared the report with the executive sponsors. The study concluded that CECONY maintain allocation and direct charge functionalities as is within the current state. The executive sponsors and team leads, however, supported further review of this recommendation's implementation. As a result, the team has proposed a "future state" that would include direct charging where appropriate, which is currently under review for feasibility and will be addressed in the position paper/analysis which is due on August 31, 2017.

October 13, 2017 Update:

The implementation team finds that NorthStar's recommendation to directly charge engineering and construction oversight costs has merit with regards to a limited population of large capital projects. Based on a cost benefit analysis of the recommendation as well as the results of a benchmarking study commissioned by the Company, CECONY will implement direct charging of engineering and construction oversight costs for large capital projects and maintain the current allocation approach for the voluminous number of smaller, routine, repetitive projects. This position was supported by the position paper previously submitted to Staff. The implementation team continues to work toward developing an implementation plan to institute direct charging by January 1, 2019.

Recommendation Number 15: VI-6

Recommendation: Formalize the O&R contractor oversight rotation policy and revise O&R contract management procedures to provide more detailed guidance regarding the use of the Contractor Oversight System.

Roles and Responsibilities:

Executive Sponsor: Frank Peverly
Team Lead(s): Gary Windman

Scope: Project Purpose, Objectives, and Assumptions

O&R will formalize its contractor oversight rotation policy and revise the O&R contract management procedures to provide more detailed guidance regarding the use of the Contractor Oversight System (COS), inclusive of documenting roles and responsibilities to ensure that contractor oversight is performed effectively and that the results are documented in the Contractor Oversight System.

There are two distinct work streams within the scope of this implementation plan:

- 1) The development of a Management Rotation Policy for Operations personnel who have purchasing authority, contract payment authorization or oversight responsibility of contractor activities.
- 2) The revision of O&R's Project Management's Construction Management Manual (CMM) to define and provide adequate guidelines regarding the use of the Contractor Oversight System (COS).

The assumptions made during the development of this implementation plan are as follows:

- This project will impact all Operations (Gas, Electric, and Project Management)
- The policy changes will be communicated to all management employees in Operations.

Work Plan:

O&R will develop a Management Rotation Policy utilizing CECONY's Management Rotation Policy Procedure, CONST-011 Revision 2, as a guideline. The team will also revise O&R's CMM defined guidelines on the use of the COS System. The implementation team will meet on a regularly scheduled basis to complete the policy and the revisions as further defined in the Deliverables/Milestones section below.

Deliverables/Milestones:

Deliverable/ Milestone	Start Date	Delivery Date	Comments
Rotation Policy	April 18, 2016	December 31, 2016, 2016	
Establish Contractor Rotation Policy Work Team	April 18, 2016	May 1, 2016	Complete
Review Con Edison Contractor Rotation Policy	May 2, 2106	May 15, 2016	Complete
Draft O&R Contractor Rotation Policy	April 18, 2016	June 3, 2016	Complete
Submit for Review and Approval	June 4, 2016	June 17, 2016	Complete
Executive/CPC Approval	June 20,2016	December 31, 2016	Complete
COS Guidelines	April 18,2016	June 16, 2016	
Draft COS clause within CMM	April 18, 2016	June 3, 2016	Complete
Submit for Department Review and Approval	June 4, 2016	June 10, 2016	Complete
Employee Change Management Communication	June 10, 2016	June 16, 2016	Complete

Cost Benefit Analysis:

This work will be completed with in-house resources. There is nominal cost to develop the rotation policy and document an existing COS practice in the CMM procedure.

Although good practice is not always tangible, benefits can include the reduction in the potential for malfeasance and promotion of a more robust contractor review process during bidding based on COS entries that can contribute to a more effective bid process and better service to customers.

Risk Analysis:

Lack of documented requirements to rotate contractor oversight assignments increases the possibility that rotations will not occur, increasing the opportunity for malfeasance.

Without formally documented procedures it may increase the risk that employees will not properly use COS to document contractor performance. This would reduce the necessary data to adequately prepare bid lists and to properly evaluate contractors.

February 13, 2017 Update:

This recommendation is complete.

In accordance with the implementation plan O&R has completed all of the deliverables and milestones and satisfied all of the requirements for completion of the recommendation. Modifications were made to O&R's Contract Management Procedure (CM-1) to include requirements for the rotation of Company

inspectors who oversee contractors on projects. In addition, modifications were made to Company's Contract Management Manual (CMM) to provide more detailed guidance regarding the use of the Company's Contractor Oversight System (COS). By formalizing the Company's inspector rotation policy for those employees overseeing contractor work within CM-1 and adding clarifying language the Company's CMM regarding the use of COS, the Company has strengthened its existing procedures which will foster improved consistency with regulatory requirements, provide clearer direction to employees, and reduce project risk.

June 13, 2017 Update:

This recommendation is complete and is pending Staff review and closeout.

October 13, 2017 Update:

This recommendation is complete and is pending Staff review and closeout.

Recommendation Number 16: VI-7

Recommendation: Perform a formal review of O&R change orders on a semi-annual basis to identify and distribute lessons learned.

Roles and Responsibilities:

Executive Sponsor: Frank Peverly
Team Lead(s): Gary Windman

Scope: Project Purpose, Objectives, and Assumptions:

O&R's project team will document a process for the Project Management Organization (PMO) to formally review change orders on a semi-annual basis. The objectives of the semi-annual change order review process is to identify change orders for review, develop steps for review and analysis, and distribute the lessons learned from the review to the appropriate organizational entities.

For the purposes of this implementation plan, O&R has relied on the following assumptions:

- Change orders are those changes associated with change in scope
- Change orders do not include contract changes where time is extended and/or funding is added, such as with Blanket Purchase Agreements (BPAs), where units for services are pre-defined.
- Post Approved Change Orders refers to change orders that were completed and approved in accordance with established policies and practices for approval that will now be subject to a semi-annual review process.
- There is no existing post approval periodic review process established at O&R for reviewing change orders.

At O&R, the predominance of change orders result from construction contracts. The PMO is the organization that performs the majority of the construction work for O&R. This project will impact the PMO and all work associated with this project will be done by the PMO.

Work Plan:

The team will first develop a process that will detail which Post Approved Change Orders are subject to the semi-annual review, how change orders in this process will be analyzed, and how to establish, communicate, and distribute lessons learned from the review.

After the process and review method is established, the team will develop a standard report template for the reviewed change orders.

Finally, the team will decide whether to develop a guidance document for the change order review process or incorporate it within PMO's existing Project Execution Manual.

Deliverables/Milestones:

Deliverable/Milestone	Start Date	Delivery Date	Comments
Develop change order review process	June 1, 2016	September 30, 2016	Complete
Methodology and standard template	October 1, 2016	November 15, 2016	Complete
Finalize change order review process and establish communications plan for employees.	November 16, 2016	December 31, 2016	Complete

Cost Benefit Analysis:

This work will be completed with in-house resources. There is minimal cost to develop the change order review process and nominal cost to document the process within an existing procedure or a guidance document.

Although the amount of construction change orders at O&R are relatively low in number, the benefits associated with this review effort may include stronger approval practices, a reduction in future change orders, and/or the avoidance of future scope or changes in engineering design which may result in improved efficiency, productivity, or reduced cost.

Risk Analysis:

Root cause change order analysis may result in stronger approval practices, a reduction in future change orders, and/or the avoidance of future changes to scope or engineering design. The risk in not performing periodic reviews of past change orders could result in future avoidable change orders potentially causing inefficiencies, reduced productivity, or increased costs.

February 13, 2017 Update:

This recommendation is complete.

In accordance with the implementation plan, O&R has completed all of the deliverables and milestones and satisfied all of the requirements for completion of the recommendation. PMO-9 Change Order Review Process was formalized and established which includes guidance on identifying change orders to review, performing a DMAIC review and analysis, and distributing lessons learned from the review process. Implementation of the change order review process may result in stronger approval practices, the reduction or avoidance of change orders and the reduction of certain project risks.

June 13, 2017 Update:

This recommendation is complete and is pending Staff review and closeout.

October 13, 2017 Update:

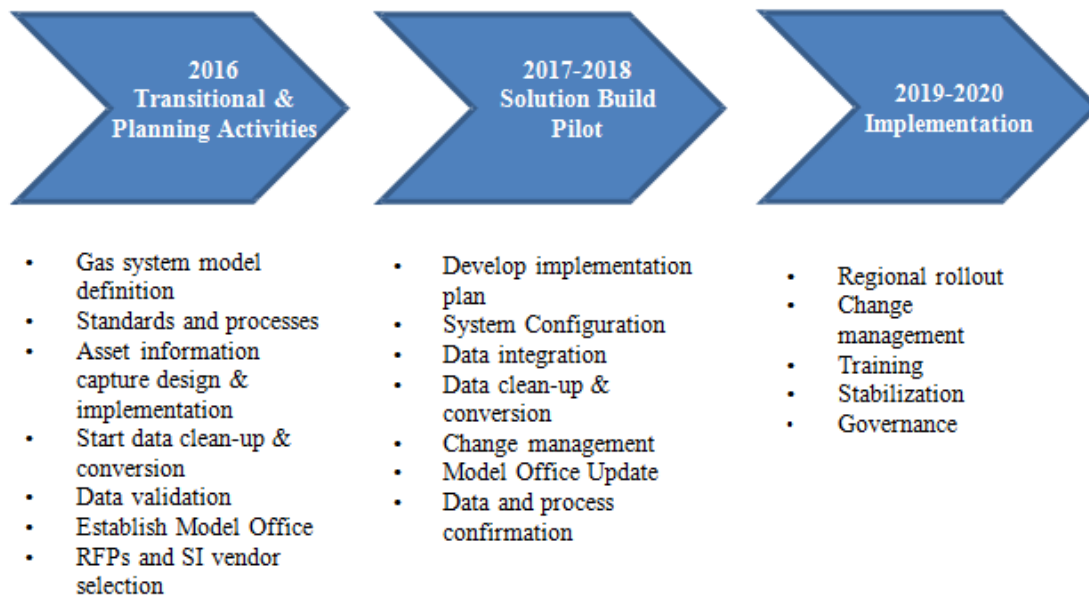
This recommendation is complete and is pending Staff review and closeout.

VII. Work Management

Recommendation Number 17: VII-1

Recommendation: Continue CECONY Gas Operations work management process improvement activities in accordance with its Gas IT Roadmap. A high level overview of the implementation plan is shown below.

High Level Gas Operations Work and Asset Management Improvement Road Map



Roles and Responsibilities:

Executive Sponsor: Marc, Huestis, Katherine Boden, Mary Kelly, Manny Cancel
Team Lead(s): Pascale Ambrosio, Karen Stanford

Scope: Project Purpose, Objectives, and Assumptions:

CECONY Gas Operations identified the need for an integrated work and asset management system to optimize its ability to plan and manage all types of work. A Gas Work Management Roadmap project team was established to examine and develop the justification and implementation plan (Roadmap assessment) for an investment in developing standardized work and asset management business processes for CECONY Gas Operations.

Leveraging the results and recommendations within the Roadmap assessment, the project team will select and deploy an integrated Work and Asset Management Solution for Gas Operations that will allow for standardization of work processes, better work scheduling and prioritization, as well as provide a single repository for all work and asset data related to CECONY's gas facilities.

This project will also yield strategic benefits that support both CECONY's and Gas Operations' goals and objectives. Some examples are: an integrated view of financial and operational data resulting in more

effective risk mitigation strategies, increased transparency, more effective trending and analysis, improved operational efficiencies, and an enhanced customer experience through more accurate and timely information around work flow and job status. In addition, while the business has always operated within a stringent regulatory environment, the advent (and ongoing) implementation of stricter integrity management regulations has given rise to a new set of requirements that the existing operating model, supporting systems and processes will be challenged to maintain.

Work Plan:

The creation of a 2017 – 2021 detailed implementation plan is a deliverable for 2017. The high level implementation plan is as follows:

2016	2017-2018	2019 - 2021
Gas system model definition	Develop implementation plan	Training
Standards and processes	System configuration	Regional rollout
Asset information capture design	Data integration	Stabilization
Initiate data clean-up & conversion	Data clean-up & conversion	Governance
Data validation	Change management	Change Management
RFPs and SI vendor selection	Data and process confirmation	

Deliverables/Milestones:

Deliverable/Milestone	Start Date	Delivery Date	
Gas system model definition	April 1, 2016	December 31, 2016	Complete
Standards and processes	April 1, 2016	December 31, 2016	Complete
Asset information capture design	April 1, 2016	December 31, 2016	Complete
2017 Budget Approval	May 1, 2016	December 31, 2016	Complete
Initiate data clean-up & conversion	July 1, 2016	September 30, 2016	Complete
Data validation	July 1, 2016	September 30, 2016	Complete
Develop implementation plan	July 1, 2016	March 31, 2017	Complete
RFPs and SI vendor selection	August 1, 2016	May 31, 2017	Complete
Project Startup Activities	July 10, 2017	June 5, 2020	
Training Management	July 10, 2017	June 5, 2020	
Mobility	July 24, 2017	June 14, 2018	
Phase 1	July 24, 2017	January 21, 2019	
Phase 2	July 16, 2018	February 25, 2020	
Phase 3	May 13, 2019	June 16, 2020	

*To be refined upon completion of development of implementation plan

Cost Benefit Analysis:

The estimated project costs are provided in the table below.

Year	Estimate*
2016	\$3,952
2017	\$21,928
2018	\$27,149
2019	\$32,714
2020	\$25,005
Total	\$110,748

*Note: Numbers in thousands. Also, the total estimated cost is not anticipated to change; however, because of the schedule extension to 2021, the cash flow must be updated to reflect this schedule change.

The cost savings were derived through data collection of existing processes and post-implementation equivalents to produce an estimate of the time savings or productivity improvements. Specific examples of areas where cost savings are expected include, but are not limited to:

- Field personnel activities: Supervisors are able spend more time in the field, less time in the office completing manual paper tasks like scheduling and closing out documents. Improvement in scheduling and routing is expected to be realized through use of scheduling software tools.
- Clerical personnel activities: Integration of closeout activities, which are currently manual and largely all on paper, will decrease the time to complete these activities as there will be less need to manually enter the data.
- Engineering Designer activities: Efficiencies expected in engineering include standardization of design tools, increased bundling opportunities before releasing projects to the field, and automation of the closeout process when asset manager and property records databases are integrated.

The table below summarizes the estimated annual cost savings.

Benefits Summary by Benefit Category			
	Benefit Dollars*		
Benefit Category	O&M	Capital	Total Benefits
Field Personnel	\$3,513	\$3,898	\$7,411
Clerical	\$1,092	\$893	\$1,985
Designer	\$193	\$773	\$966
Supervisor	\$360	\$296	\$656
IT Support	\$635		\$635
Non-Labor	\$206	\$1,485	\$1,691
Total Annual Benefits	\$5,999	\$7,345	\$13,344
*Numbers in thousands			

Risk Analysis:

Risk of no action:

Without the combination of standardized processes and integrated information technology solution, Gas Operations would be in an inferior position to meet future operational and regulatory challenges and complexities. Moreover, Gas Operations would continue to manage assets in a labor intensive fashion which will present significant challenges with increases in the work and resources that will need to be managed.

Risk to project success:

- Initiation of the implementation of this project is contingent upon approval of the capital funding in the current rate case request.
- Competing activities such as the AMI project places a strain on the availability of subject matter experts to participate in the project.
- Regulatory requirements continue to become more stringent and may impact the scope and duration of the project.

February 13, 2017 Update:

The project required a core business and IT project team to review and document work flows, develop a data model and develop the project business case. The business case produced an estimated project cost of \$111 million with an associated savings of \$13 million annually upon full implementation of the system.

In 2016, the company engaged with Accenture to facilitate the review and update over 50 business process design documents (BPDs). These reviews were led by teams of Gas subject matter experts with support from IT to ensure alignment with current specifications, procedures, regulations, standards and processes. The BPDs formed the basis for completion of the Reports, Interface, Conversion, Enhancements, Forms and Workflow (RICEFW) inventory and ultimately the project estimate.

The team also commenced work on several initiatives to support the overall implementation of the project. These included the change management plan, contractor management strategy, reporting requirements and mobile software and platform selection. The mobile initiative includes the asset information capture design strategy. Each of these initiatives is integral to the success of the project and will ensure effectiveness of the system.

In conjunction with the creation of the business case, the company contracted with a vendor, GasOps IQ, to define and build a system model with an integrated framework to capture key asset related metadata (attributes, pedigree, events, and conditions) along the entire asset lifecycle. The data model will form the foundation of the asset repository structure and will be a key input into the system landscape diagram.

In 2016, other activities included the initiation of data clean-up, conversion and data validation. This was achieved by inventorying existing systems and databases to create a profile of available work and asset data. Data clean-up, conversion and validation activities are approximately 15% complete and are on track to continue as scheduled through 2018.

The 2017 budget was approved at the November 2016 board meeting and years 2018 – 2020 are included in the five-year look ahead. The project was presented to the Finance Committee of the Board in January 2017 and has been approved.

Next steps include the creation of a request for proposal and an associated bid event to select the system integration vendor for the finalization of the implementation plan.

June 13, 2017 Update:

The Implementation Plan was finalized and included in the package for the vendor bid events.

To initiate the bid event, three Requests for Proposals (RFPs) were issued between March 21st and March 28th for the three project towers of System Integration (SI), Software Quality Assurance (SQA) and Project Management Office (PMO). In total, five vendors were invited to submit proposals and were invited to a pre-bid on April 3. The deadline for questions was April 11 and final responses were due on April 18. Four of the five vendors submitted responses.

Upon review of the responses by the project team, all four of the vendors that submitted responses were invited for oral presentations for at least one of the three towers. Oral presentations were held between May 3 and May 9.

The team evaluated the results of the vendor responses and performance at the oral presentations and provided a preliminary scorecard to Supply Chain. Supplier selections have been made and recommendations are being documented for approval by Supply Chain.

October 13, 2017 Update:

In July 2017, Supply Chain completed their approval process resulting in contract awards to a System Integration vendor, CGI, Project Management Office, CapGemini and Software Quality Assurance, CapGemini. As a result, the Work Plan and Deliverables/Milestones have been updated to reflect the implementation plan agreed upon with CGI.

- The Work Plan has been revised to include an updated deployment strategy. The original Work Plan mirrored the Electric Work Management System plan in having a regional rollout of the new system. However, because the Gas Emergency Response Center (GERC) is a centralized department responsible for dispatching emergent work across all regions, emergent work streams will be deployed across all regions in the first phase of the project. In the following Phase 2, rollout will be to the Engineering and Construction work streams. The third and final phase will include deployment to the remaining, smaller groups, such as Leak Survey and Pressure Control.
- Mobility – Gas operations will implement a 3rd party mobile solution to complement its work and asset management system. The mobile solution will focus on enhancing the user experience of our field forces and enable them to optimally receive, manage and record their work on handheld devices. The solution will provide means to electronically capture work and asset data at the job location during construction, operation and inspection activities while also providing overall data quality and integrity. Additionally, the mobile solution will also provide increased visibility of our crew members for optimized response during emergency situations. The mobile solution will be implemented using a Mobile Enterprise

Application Platform (MEAP) architecture. This platform approach will provide the gas organization with capabilities to develop, integrate, secure, deploy, maintain, and monitor mobile applications that will meet business, regulatory & compliance requirements in an agile manner. One of the key advantages of MEAP over traditional point to point solution is the availability of a complete integrated development environment which allows for creation of mobile applications via simple user interfaces instead of coding thereby promoting accelerated application development & deployment.

- Phase 1 – Compliance and Emergent work. This phase includes business processes for mandated inspections and leak response. This phase will replace legacy systems that support the Gas Emergency Response Center (GERC), Gas Distribution Services (GDS), District Construction and Leak Survey. The activities in phase 1 will incorporate integrations to external corporate applications / systems and data utilized by the affected gas groups(Human Resources Payroll, Customer Information Systems, Energy Services Work Management Platform, etc.)
- Phase 2 – Construction. This phase includes capital construction projects. Gas District construction work required for compliance and emergent work accounted for as part of Phase 1. This phase will include integrations with Construction Management organization legacy applications COMPASS / LOT.
- Phase 3 – Small Groups. This phase includes all other gas work / groups, such as Leak Survey (non-leak activities), Tunnels, Gas Meter Shop, Corrosion Control and Pressure Control.
- Phase 1 Deliverables/Milestones – Since the last update there has been progress on a number of activities.
 - Training management has initiated a number of activities to support the Organizational Change Management initiative. The team has conducted over 50 stakeholder impact interviews. This interviews will provide insight into the expectations and perceptions of our intended user base.
 - Alignment workshops – Software vendor and System Integrator, CGI, hosted Alignment Workshops with the project team and subject matter experts (SME's) from the organization. The intent is to ensure there is alignment around the scope of the project related to the various groups impacted by this effort.
 - Initial Configuration – Establishment of a software environment configuration baseline taking into account all organizational, regional and asset information. This initial configuration will be utilized for common design configuration, validation of business rules and user acceptance testing.

Recommendation Number 18: VII-2

Recommendation: Develop formal reports on CECONY and O&R trends in work load levels, workforce productivity and utilization.

Roles and Responsibilities:

Executive Sponsor: Manny Cancel, Scott Sanders, Milovan Blair, Robert Schimmenti, Marc Huestis, Frank Peverly
Team Lead(s): Nicholas Colonna

Scope: Project Purpose, Objectives, and Assumptions:

This recommendation requires CECONY and O&R to create formal trending reports for work load levels, workforce productivity, and utilization. Each of these three reports is defined as follows:

- Work load levels: A measure of units received versus units completed and the units in the backlog for various work categories to be defined by each organization.
- Workforce productivity: A measure of the estimated labor hours for each planned work activity versus the actual labor hours to complete each planned work activity.
- Utilization:
 - A measure of the number of labor hours scheduled to work versus the number of labor hours available to work.
 - A measure of quantity of work versus the crew capability (productive hours versus total available hours)

CECONY Electric Operations

The development of a standardized dashboard for measuring and trending of work load levels and workforce productivity will require minor modifications to the CGI - Logica Work Management System and supporting dashboard. The current utilization report meets the requirements.

The work load level dashboard will address trends relating to units received, units completed and units in backlog for various work categories such as shunts & bridges, open secondary mains, transformer banks off, damaged poles and primary faults.

The workforce productivity dashboard will address trends relating to operational productivity (OPI) and productivity index (PI). Operational Productivity (OPI) measures actual charged hours, including travel and delays, compared to design hours. The Productivity Index (PI) measures actual charged hours (hands on hours) compared to design hours. The metrics will be defined at the Electric Operations level, the regional organization level, the work out location level, the section level, supervisor level and crew level.

The current utilization report addresses trends in crew hours scheduled as compared to available crew hours for Electric Operations, the regional organization and the various regional departments. The

utilization report addresses trends in the actual number of scheduled work components that are worked compared to total number of work components scheduled.

CECONY Central Operations

Central Operations uses more than one work management system, so the information necessary for the creation of these reports is being collected and stored by different methods in each organization. In order for this project to be successful, an assessment of available information and processes will be performed. In organizations where it is determined this information is not available, CECONY will assess different methods of collecting and reporting information that can be used to develop trend reports. A standardized dashboard for measuring and trending work load levels, work force productivity and utilization will be developed and deployed where feasible. Standalone reports will be created where a dashboard solution is not practical.

CECONY Gas Operations

CECONY Gas Operations uses a variety of systems and data to manage work. Gas Operations plans to implement a similar work management system that is in use in Electric Operations (CGI ARM – formerly Logica ARM). This system includes the use of work management data for resource planning. Once in place, Gas Operations will employ a similar process for using work management data in resource planning. To address this recommendation in the near term, Gas Operations will continue to develop and modify the capability analysis that was used to develop the Five-Year Resource Plan and will use the information and data it currently has and provides through existing work management systems and processes as well as Oracle Business Intelligence.

Orange and Rockland

Through a collaborative effort with O&R's planning groups for Electric, Gas and Substation Operations, the Project Team will design and implement effective work load level, workforce productivity and utilization trending reports.

Currently O&R Electric, Gas and Substation Operations provide a monthly formal productivity report produced from the work management system. The trending data O&R will use for reporting currently resides in the work management system database. The plan is to leverage existing data already being accumulated in the work management system and build on a reporting effort started prior to the NorthStar recommendation.

Work Plan:

Deliverables/Milestones:

Deliverable/Milestone	Start Date	Delivery Date	Comments
Review and assess current capabilities of work management processes, trend reporting, and systems in each	June 1, 2016	October 31, 2016	Complete

organization			
Identify any process or system changes that are necessary to support this initiative.	June 1, 2016	October 31, 2016	Complete
Develop action plans to implement changes to existing work management process, trend reporting and/or system changes.	June 1, 2016	December 31, 2016	Complete
Create the capability to measure the required parameters in each organization for each of the trend reports and an automated method to perform the analysis.	June 1, 2016	December 31, 2016	Complete
Implement enhancements to existing reports.	June 1, 2016	December 31, 2016	Complete
Review and identify any gaps in staffing required to facilitate work and resource planning activities.	June 1, 2016	December 31, 2016	Complete
Create a mechanism to institutionalize the work management changes and the creation, distribution, and review of the trend reports.	June 1, 2016	June 30, 2017	Complete
Implement the trend reports through the use of information sessions and webinars.	June 1, 2016	June 30, 2017	Complete
Incorporate process changes and report templates into design documentations for any new Work Management System implementation.	June 1, 2016	June 30, 2017	Complete
Work Force Productivity Report	June 1, 2016	June 30, 2017	Complete
Work Load Levels Report	June 1, 2016	June 30, 2017	Complete
Utilization Report	June 1, 2016	June 30, 2017	Complete

Cost Benefit Analysis:

CECONY Electric Operations and Gas Operations

The incremental costs associated with developing the trend reports is expected to be nominal since the implementation of this recommendation will occur in concert with the implementation of ongoing and planned improvements to the work management systems.

CECONY Central Operations

Since there are on-going and planned improvements to some of the Work Management Systems for Transmission Operations, Substation Operations and Steam Operations, the trend reports for these areas will be implemented as part of these improvements. The reports will be created on a standalone basis in all other areas.

Orange and Rockland

The project work is anticipated to be completed with in-house resources. The cost of development will depend on the technical design which will be determined as part of this initiative.

Trending analysis may allow for better utilization of company crews and optimized scheduling. Additional benefits may be identified as the business requirements and technical specifications are developed.

Risk Analysis:

Performing routine trend analyses of work load levels, workforce productivity and utilization is likely to encourage the effective management of resources and costs.

Risk is defined as anything that impacts the cost or timeline of the project. This may include but is not limited to the loss of key team members. The mitigation plan for this risk would be to re-allocate current resources or bring on additional contract resources.

February 13, 2017 Update:

Electric Operations

A review and assessment of the current capabilities of the Electric Operations work management system was completed. Reporting system changes were identified and action plans were implemented to track completion of the steps necessary to develop and automate the required trend reports. Electric Operations utilizes the CGI Asset Resource Management (ARM) Suite to manage all work. Electric Operations then has a reporting system built on top of the CGI ARM Suite. Electric Operations identified the following Work Load Level (Banks Off, Open Mains, Shunts & Bridges, primary cable or splicing defects – aka “C&D” Faults, Damaged Poles), Crew Performance and Utilization, and Delays reports that would be modified to include trending. The development and implementation of the reports is complete. Training on the reports is presently in progress and will be completed in February of 2017.

Gas Operations

Gas Operations performed a detailed review and assessment of present process, systems, and reporting practices. Gas Operations continues to manage and monitor work load levels, workforce productivity and utilization reporting through existing work management systems, Excel spreadsheets, as well as Oracle Business Intelligence tools. Presently several input sources are required to feed and create reports.

Central Operations

A review and assessment of the current capabilities of the Central Operations work management systems was completed. System changes were identified and action plans were implemented to track completion of the steps necessary to develop and automate the required trend reports. For Central Operations groups that use Maximo, utilization, productivity, and work load level reports were built in the “Engage” platform. For previous Engage users, such as Substation Operations, these reports are

fully functioning and in use. For new Engage users, we are in the process of configuring the software and training personnel. We are on-target to have all Engage users trained and fully utilizing the system report capabilities by June 30 2017.

Orange & Rockland

Orange and Rockland's Gas, Electric and Substation Operations performed a detailed review and assessment of present processes, systems and reporting practices. They identify requirements for trending analysis to be incorporated in new trending reports of work load levels, workforce productivity and utilization. An Excel spreadsheet prototype of the report was created and reviewed with operating personnel. IT developed the technical specifications, and are progressing to complete the remaining milestones by June, 2017.

June 13, 2017 Update:

Electric Operations

Training has been conducted on the reports in February 2017. All reports were presented to the Executive Sponsor (Senior Vice President Electric Operations) as well as to the Electric Operations Officers and General Managers at the May 2017 Expanded Staff meeting.

Gas Operations

Gas Operations continues to monitor all work load levels and workforce productivity through the following systems and reports. Productivity Reports generated from Cost Management through the (ECS) and (GOPS) systems. Excel spreadsheets, as well as Oracle Business Intelligence Tools and Weekly Work Status reports. Gas Operations has also played an important role in assisting the Business Improvement Service Section in making sure that all units completed within a month are represented correctly on the Productivity Report. This is being accomplished by conference calls with IT, Gas Operations, Business Improvement and Project Accounting. Proposed plan and reports have been discussed with the Executive Sponsor (Senior Vice President Gas Operations) and his officers.

Central Operations

The team has met with the Central Operations executives to demonstrate how the reports function. For new Engage users, we have continued to configure the software so that the metrics work properly for each group and have demonstrated how these reports work to key personnel. We are on-target to have all Engage users trained and fully utilizing the system report capabilities by June 30, 2017. For Steam Distribution, IT has been working on report automation which is on target to be completed by June 30, 2017.

Orange & Rockland

IT developed the technical specifications and is finalizing the development of the trending reports. O&R's progress towards the completion of the trending reports was presented to the Executive Sponsor (O&R Vice President and the IT Vice President) in March, 2017. The team is on target to complete the remaining milestones by June 30, 2017.

October 13, 2017 Update:

This recommendation is complete.

All of the reports have been reviewed by their respective Executive Sponsor and are currently in use.

Recommendation Number 19: VII-3

Recommendation: Establish formal processes to use work management data for annual resource planning as part of the annual business planning activities of CECONY Gas Operations, Substations Operations, Transmission Operations and Steam Plants.

Roles and Responsibilities:

Executive Sponsor: Milovan Blair, Marc Huestis
Team Lead(s): Gina Callender, Laura McCaffrey, Vernon Schaefer, Scott Kalberer, Brian Yee-Chan

Scope: Project Purpose, Objectives, and Assumptions:

CECONY Substation Operations, Transmission Operations, and Steam Plants use Maximo and other work management applications that interface with Maximo to effectively identify, prioritize, plan, schedule, and track work. The data from these systems will be evaluated to determine how it can be used to develop annual resource plans.

CECONY Substations Operations, Transmission Operations and Steam Plants will formalize processes to specifically address the resource planning aspect of the annual business planning activities, and evaluate the feasibility and benefits of standardizing processes across organizations. These activities will include the use of work management data for resource planning.

CECONY Gas Operations uses a variety of systems to manage work. Gas Operations plans to implement a similar work management system as is in use in Electric Operations (CGI ARM – formerly Logica ARM). This system includes the use of work management data for resource planning. Once in place, Gas Operations will utilize a similar process for using work management data in resource planning. To address this recommendation in the near term, Gas Operations will continue to develop and modify the capability analysis that was used to develop the 5 Year Resource Plan. In the absence of crew-level details, the plan supports high-level recommendations for resource allocation, workload, and budget implications.

Work Plan:

Document existing resource planning practices:

1. Review and document Steam Distribution resource planning
2. Review and document Electric Operations resource planning
3. Review and document existing practices (Substation Operations, Transmission Operations, Gas Operations, and Steam Plants)
 - a. Review and document CENG Order of Magnitude estimating process

Analysis:

1. Define Resource Planning Types
 - a. Fixed post vs. capital project work, vs. preventative maintenance, vs. corrective maintenance (FCATS)

- b. Company Labor vs. Contractors
 - i. OT vs. straight time
 - 2. Analyze existing work management data to determine how to use it to predict resource needs for future planned work
 - a. Identify data that is needed but not currently available (gaps in data)

Develop the resource planning process (if required):

- 1. Determine which Systems/ Processes for each applicable use case
 - a. Evaluate standardization opportunities across business units
 - b. Develop processes (where processes don't already exist or are inadequate)
 - c. Executive review and approval of process
- 2. Make related process changes – i.e. Budget Development incorporating new systems/processes, which could be a significant effort. Plans to implement new process will be evaluated and estimated at that time
 - a. Include monitoring of effectiveness and improvement
- 3. Training and Communication to stakeholders
 - a. Training
 - b. Communication
- 4. Implement new practice

Deliverables/Milestones:

Deliverable/Milestone	Start Date	Delivery Date	Comments
Benchmark & document existing resource planning practices	June 1, 2016	March 15, 2017	Complete
Determine which systems/processes can be used for specific work types for each organization	March 15, 2017	June 15, 2017	Complete
Position Paper/analysis	June 15, 2017	July 15, 2017	Complete
Guidance document for the use of Gas Operations capability model	July 15, 2017	September 30, 2017	Complete
Complete Central Operations capability model	July 15, 2017	December 31, 2017	
Guidance document for the use of Central Operations capability model	January 1, 2018	March 31, 2018	

Cost Benefit Analysis:

For CECONY Substation Operations, Transmission Operations, and Steam Plants this initiative is an enhancement to current processes and does not require additional hardware or software to implement. The cost of implementing new systems/processes based on data already contained within work

management systems may require significant manpower to assess and implement. The benefit of implementing this process will be the increased accuracy in projecting resource requirements.

The estimated cost is approximately \$175,000. The project will be completed with in-house resources, estimated to require 2,500 hours at approximately \$70.00 per hour, and external forces for benchmarking purposes. The cost of the external forces used for benchmarking will be determined after the selection of the vendor.

Gas Operations will fully achieve increased accuracy in projecting resource requirements following the implementation of a new Gas Work Management System referenced in Recommendation Number: VII-1. Cost benefits are outlined in the response to that recommendation.

Risk Analysis:

The risk of not implementing this recommendation could potentially be inaccurate forecasts of resource needs. This ultimately impacts the budget for each organization.

There is a potential risk of making the work management process too rigid which would not allow for proper flexibility in the resource planning process. To mitigate this risk, the team should allow for refinement of the process, on an as needed basis.

February 13, 2017 Update:

The implementation team embarked on a joint effort benchmarking study with 3 other NorthStar recommendations (Recommendations 11, 19, 20, and 21). The implementation plan for #21 has been deferred to the Liberty Staffing Audit. This allowed the companies to take advantage of synergies and common themes to reduce the cost of hiring an individual contractor to perform each of the external benchmarking studies. This effort began in June 2016 to create the Request for Proposal (RFP) to solicit a consultant to assist in our benchmarking effort. The RFP was submitted on June 29, 2016. The company received proposals from four vendors which were then scored on commercial and financial considerations, operational capabilities, project planning and control, account management and service, and overall presentation from all participating groups. Meetings were held on August 3, 2016 and August 9, 2016 to review and consolidate all scores. The scores were submitted to Supply Chain Management on August 18, 2016 narrowing down the vendors to two choices. Separate interviews were conducted with two remaining vendors on September 8, 2016 to clarify and confirm each vendor's understanding of the deliverables and their plan to achieve them. Supply Chain further reviewed the vendors based on pricing and awarded the bid to Ernst and Young on September 23, 2016. Their scope was submitted to the company on September 27, 2016 and submitted to the Law Department. The contract was finalized on November 7, 2016. The contractor work commenced on November 28, 2016. The original benchmarking effort was scheduled to be done on December 15, 2016 but has been delayed 3 months due to the longer than anticipated time to prepare, review, and award the contract.

Efforts are underway in Central Operations to utilize work management and equipment condition information to project resource needs for Operations and Maintenance. By analyzing equipment performance trends, past maintenance requirements, and current asset health we are attempting to construct a methodology that can reasonably project future maintenance events. A similar methodology is being applied to facility maintenance. Combining these projections with known

scheduled maintenance requirements and Operational staffing requirements will enable us to project future O&M resource needs. For capital work, which varies in nature, projecting resource requirements requires the identification of projects and estimation of resources needed to complete those projects. Central Operations is developing a system to facilitate the capture and aggregation of project capital work and resource estimates to facilitate resource planning for the capital work. This information will then be compared to projected resource availability of Company labor to determine the level of contractor support necessary to execute the work.

CECONY Substations, Gas Operations, Transmission Operations and Steam Plants have been working on a separate parallel path and in conjunction with recommendation 18. Their work plan has been updated and previously submitted. An important aspect of being able to accurately predict O&M resource needs is the ability to assess the impact of resource levels on work load backlogs. The creation of the trend reports which is part of a Recommendation 18 deliverable will greatly assist with this effort.

June 13, 2017 Update:

The implementation team received and reviewed the joint benchmarking study that was done in conjunction with 3 other NorthStar recommendations (Recommendations 11, 20, and 21). The study found that CECONY's practices as a whole were aligned with its peer companies. However, the study also found that different silos within CECONY use different tools to manage resource levels and recommended that the team focus on developing common core work performance metrics. The team is leveraging the study to assist in determining which systems/processes can be used for specific work types for each organization.

Efforts are continuing in Central Operations to utilize work management and equipment condition information to forecast resource needs for Operations and Maintenance. For capital work, Central Operations is continuing to develop a system to facilitate the capture and aggregation of project capital work and resource estimates to facilitate resource planning.

Gas Operations' existing resource planning practices are based on a five-year resource plan that is utilized as part of the annual business planning activities. Gas Operations continues to develop a comprehensive workforce planning strategy through the resource plan to address the forecasted increase in work volumes. The result of the plan includes a long term staffing strategy for Company and contractor workforces to meet the needs of future capital and O&M programs.

October 13, 2017 Update:

Central Operations has completed the capability model for O & M needs. For capital work, efforts are continuing to develop a system to facilitate the capture and aggregation of project capital work and resource estimates to facilitate resource planning across all departments.

To enhance and mature this new resource planning model, a guidance document will be developed to memorialize the process and will be completed after the capability models are built by December 31, 2017. The plan will be to have the guidance document in place by March 31, 2018.

Gas Operations' existing resource planning practices are based on a five-year resource plan that is utilized as part of annual business planning activities. Gas Operations has developed a comprehensive workforce planning strategy through the resource plan to address the forecasted increase in work volumes. A resource capability analysis was developed and rolled out across all the operating areas. Resource capability is a comprehensive resource model that converts forecasted work (in units) to man-hours to analyze whether the organization has resources to achieve the forecast. The result of the plan includes a long term staffing strategy for Company and contractor workforces to meet the needs of future capital and O&M programs. To enhance and mature this new resource planning model, a guidance document was issued on September 30, 2017 to memorialize the process.

In mid-2016, this analysis looked at work forecasted near term (1-3 months), and up-to one year out. Longer term resource forecasts are covered under the enhancement of the Resource Plan (5 Year plan). Data analytics is completed under the Work and Resource Management department as a centralized organization with the benefit of overseeing trends throughout all the operating areas. Each quarter, resource capability meetings are conducted in each operating area with construction departments and subject matter experts (SMEs) that oversee the resources. Since the roll out of this model, it has been used to identifying and execute resource movements in advance. A comprehensive resource plan was created using existing data that projected 2018 labor requirements. Going forward, the work plan includes continuing iterative resource capability analysis and SME meetings on a quarterly basis to proactively identify risks.

Recommendation Number 20: VII-4

Recommendation: Develop formal work management practices for CECONY and O&R engineering organizations. Where possible, leverage the results of CECONY Central Engineering's Continuous Improvement Program. The work management systems should have appropriate system tools to support the various individual and distinct engineering functional processes.

- Central Engineering should prepare a document which provides an overview of its Continuous Improvement Program to share with engineering management personnel in the other CECONY and O&R operations organizations. The overview should describe the purpose, methodology, and results of each initiative, including the impact on the engineering work processes. Elements that should be included are:
 - 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
- Each engineering organization should form a team to assess whether any of the Central Engineering initiatives would improve its operations, and to identify other opportunities to improve its work processes.
- Once each engineering organization has identified needed Continuous Improvement Program initiatives, it should meet with members of the Continuous Improvement team to discuss the implementation process and any lessons learned.

Roles and Responsibilities:

Executive Sponsor: Sanjay Bose, Patrick McHugh, Mary Kelly, Frank Peverly
Team Lead(s): James Leary, Jonathan Russell, Tomas Hernandez, Angelo Regan, Flannan Hehir

Scope: Project Purpose, Objectives, and Assumptions:

Scope/Purpose: A corporate wide team will be formed, with sub-teams in each engineering organization, to validate existing work management practices and systems that support the various engineering functional processes and, to the extent possible, develop work management practices and systems where gaps are found.

To do so, the team will:

- Develop a document providing an overview of the Central Engineering Continuous Improvement Program (CIP).
- Document As-Is state of work management practices and systems that support engineering functions.
- Perform external benchmarking of work management practices and systems that support engineering functions.
- Perform gap analyses.
- Develop business case to implement work management practices in engineering groups.

By June 2017, document and formalize any agreed-upon initiatives that would substantially and measurably improve the work management process within each organization. The Engineering Organizations are shown below:

ORU

Electric Engineering
Gas Engineering

CECONY

Central Operations
Central Engineering
Electric Operations
Regional Engineering Groups
Bronx/Westchester
Manhattan
Brooklyn/Queens
Staten Island
Public Improvement
Customer Engineering
Distribution Engineering
Gas Operations
Transmission
Distribution
New Business/ Oil to Gas
Technical Operations

Assumptions:

- The conjunctional direct time reporting recommendation (VI-2) and proposed pilot will be considered in the initial evaluation and gap analysis processes outlined herein.
- Engineering staffing levels must be maintained to meet the minimum requirements for storm, emergency responses, operational support, and regulatory compliance and initiatives.

Work Plan:

This recommendation will be addressed in phases. First, a feasibility study will be conducted to determine where and what work management practices are beneficial and practical in the areas of engineering. The feasibility study will include internal and external benchmarking to gather information

about existing best practices in work management. The feasibility study will result in recommendations of what work management practices should be implemented and in which organizations. Once this scope is identified, detailed plans for implementation will be developed and executed and a detailed Phase II schedule will be provided, if applicable.

Phase I: Feasibility Study

- a. Benchmarking
 - a. Define As-Is State
 - b. External Benchmarking
- b. GAP analysis in current processes/practices
- c. To – Be State
 - a. Define Expected Goals of To – Be state
 - b. Develop To-be process(es) for each organization
 - c. Evaluate organizational change required to implement
 - d. Evaluate tools to support processes
- d. Cost/Benefit analysis
 - i. Identify costs associated with performing the process
 - ii. Identify implementation cost
 - iii. Identify cost savings expected from performing the process
- e. To – Be recommendation – /Position paper/analysis

Phase II: Implementation

Deliverables/Milestones:

Deliverable/Milestone	Start Date	Delivery Date	Comments
Phase I: Feasibility			
CENG Continuous Improvement Program Report	June 30, 2016	August 31, 2016	Complete
Work Management Practices As-Is Study	June 30, 2016	March 15, 2017	Complete
External Benchmarking	June 30, 2016	March 15, 2017	Complete
Gap Analysis Report	March 15, 2017	June 30, 2017	Complete
Position Paper/analysis	June 30, 2017	September 30, 2017	Complete
Phase II: Implement			
Conduct 1 st Company-wide Engineering Organizations Collaboration Meeting	October 1, 2017	March 30, 2018	
Issue Corporate Guidance Document	October 1, 2017	June 30, 2018	

Cost Benefit Analysis:

The estimated cost is approximately \$175,000. The project will be completed with in-house resources, estimated to require 2500 hours at approximately \$70.00 per hour, and external forces for

benchmarking purposes. The cost of the external forces used for benchmarking will be determined after the selection of the vendor. The final cost and benefits will be determined once the overall scope has been determined.

Benefits will be determined as part of the feasibility study, however it is expected that implementation of work management practices could yield greater insight into how engineering is deployed and what effort is required for production. This may give us the ability to analyze our process performance, which could in turn lead to better predictions of future performance and needs, as well as metrics against which to measure the impact of any improvement efforts, ultimately leading to optimized sizing and management of the workforce. In the process of performing the feasibility study we will define the desired benefits, the options, and costs and impacts associated with each option.

Risk Analysis:

- Potential risks associated with not following the recommendation:
 - Inefficient use of existing resources
 - Missed deadlines – ability to understand impact of new efforts on planned work
 - Inability to prioritize, optimize, and levelize resource utilization
- Potential risks associated with following the recommendation:
 - Administrative burden may outweigh the benefits
 - Potentially high cost associated with system maintenance and administration

February 13, 2017 Update:

The implementation team embarked on a joint effort benchmarking study with 3 other NorthStar recommendations (Recommendations 11, 19, 20, and 21). The implementation plan for #21 has been deferred to the Liberty Staffing Audit. This allowed the companies to take advantage of synergies and common themes to reduce the cost of hiring an individual contractor to perform each of the external benchmarking studies. This effort began in June 2016 to create the Request for Proposal (RFP) to solicit a consultant to assist in our benchmarking effort. The RFP was submitted on June 29, 2016. The company received proposals from four vendors which were then scored on commercial and financial considerations, operational capabilities, project planning and control, account management and service, and overall presentation from all participating groups. Meetings were held on August 3, 2016 and August 9, 2016 to review and consolidate all scores. The scores were submitted to Supply Chain Management on August 18, 2016 narrowing down the vendors to two choices. Separate interviews were conducted with two remaining vendors on September 8, 2016 to clarify and confirm each vendor's understanding of the deliverables and their plan to achieve them. Supply Chain further reviewed the vendors based on pricing and awarded the bid to Ernst and Young on September 23, 2016. Their scope was submitted to the company on September 27, 2016 and submitted to the Law Department. The contract was finalized on November 7, 2016. The contractor work commenced on November 28, 2016. The original benchmarking effort was scheduled to be done on December 15, 2016 but has been delayed 3 months due to the longer than anticipated time to prepare, review, and award the contract. The Central Engineering team representative provided a presentation of the history, structure, and accomplishments of the Central Engineering Continuous Improvement Program (CENG CIP). Subsequently, a report was issued to the team representatives, sponsors, and to the management audit team. Each organization was organized into sub-teams. Each of these teams prepared documentation of their "As-is" state to support the efforts of the external consultant's benchmarking effort. Workshops

were held with teams to facilitate the development and documentation of the as-is state. This information was provided to the external consultant.

June 13, 2017 Update:

The implementation team received and reviewed the joint benchmarking study that was done in conjunction with 3 other NorthStar recommendations (Recommendations 11, 19, and 21). The study concluded that the Company's work management practices as a whole were aligned with its peer companies. However, the team has recognized that current work practices are not formally defined. The team has met regularly to define current practices and to compare practices and documentation across the Company. The team continues to seek opportunities for improvement and standardization. This effort will define the targeted future state and drive the gap analysis that is due to be completed on June 30, 2017.

October 13, 2017 Update:

The implementation team performed and documented a gap analysis based on internal and external benchmarking against the areas of concentration outlined in the recommendation. Based on the gap analysis, the team developed a plan. The team also developed and submitted a position paper supporting their conclusions as well as the implementation plan. The team concluded that formal documentation can form a basis from which each engineering organization can share best practices. The team also recognized the possibility that some standardization across engineering organizations can be achieved through the formalization of work management practices and regular collaboration between engineering organizations sharing best practices. Based on the study, the team is recommending that each organization develop formal work management practices (i. e. formal documentation). Secondly, the Company will establish a process for collaboration between engineering organizations to share best practices and develop shared tools and systems. This plan was supported by the position paper submitted to Staff.

Recommendation Number 21: VII-5

Recommendation: Develop overtime targets for CECONY and O&R based on economic analyses and verified industry norms.

Roles and Responsibilities:

Executive Sponsor: Scott Sanders, Frank Peverly
Team Lead(s): Nicholas Colonna, Ken Kosior, Ken McKenna

Scope: Project Purpose, Objectives, and Assumptions:

It has been determined through discussion with the Company and Staff that the requirements of this recommendation are an area of focus in another active PSC proceeding “In the Matter of Focused Operations Audit of the Internal Staffing Levels and the Use of Contractors for Selected Core Utility Functions at Major New York Energy Utilities” Case 13-M-0449 (Staffing Audit).

In June 2014, the PSC retained The Liberty Consulting Group (Liberty) to conduct a statewide focused operations audit of core-function staffing levels for both employees and contractors. The objective of the Staffing Audit is to evaluate the processes by which the large New York State electric and gas utilities determine internal (employee) and external (contractor) staffing. As part of satisfying this objective, Liberty is expected to propose prospective approaches and tools for evaluating staffing needs in the issuance of their final report.

Work Plan:

There is no work plan for this recommendation. The Company will address the themes embodied in this recommendation in Case 13-M-0449. This implementation plan will be updated if this recommendation is not addressed in the Liberty Staffing Audit (Case 13-M-0449) implementation plan.

Deliverables/Milestones:

N/A

Cost Benefit Analysis:

N/A

Risk Analysis:

N/A

February 13, 2017 Update:

This recommendation is complete.

The Company will address the themes embodied in this recommendation in Case 13-M-0449.

June 13, 2017 Update:

This recommendation has been deferred to Case 13-M-0449.

October 13, 2017 Update:

This recommendation has been deferred to Case 13-M-0449.

Recommendation Number 22: VII-6

Recommendation: Develop formal studies and provide updates of contractor versus in-house costs every three to five years, and use the results of these studies in CECONY and O&R resource planning to determine the optimal use of contractors.

Roles and Responsibilities:

Executive Sponsor: Constantine Sanoulis
Team Lead(s): None

Scope: Project Purpose, Objectives, and Assumptions:

It has been determined through discussion with the Company, NorthStar, and Staff that the requirements of this recommendation are a primary area of focus in another active PSC proceeding “In the Matter of Focused Operations Audit of the Internal Staffing Levels and the Use of Contractors for Selected Core Utility Functions at Major New York Energy Utilities” Case 13-M-0449 (Staffing Audit).

In June 2014, the PSC retained The Liberty Consulting Group (Liberty) to conduct a statewide focused operations audit of core-function staffing levels for both employees and contractors. The objective of the Staffing Audit is to evaluate the processes by which the large New York State electric and gas utilities determine internal (employee) and external (contractor) staffing. As part of satisfying this objective, Liberty is expected to propose prospective approaches and tools for evaluating staffing needs in the issuance of their final report.

Work Plan:

There is no work plan for this recommendation. The Company will address the themes embodied in this recommendation in Case 13-M-0449. This implementation plan will be updated if this recommendation is not addressed in the Liberty Staffing Audit (Case 13-M-0449) implementation plan.

Deliverables/Milestones:

N/A

Cost Benefit Analysis:

N/A

Risk Analysis:

N/A

February 13, 2017 Update:

This recommendation is complete.

The Company will address the themes embodied in this recommendation in Case 13-M-0449.

June 13, 2017 Update:

This recommendation has been deferred to Case 13-M-0449.

October 13, 2017 Update:

This recommendation has been deferred to Case 13-M-0449.

IX. Customer Operations

Recommendation Number 31: IX-8

Recommendation: As part of the current rate case, CECONY and the DPS should review CECONY's customer satisfaction scoring methodologies and associated targets to ensure the indices provide the best information possible.

Roles and Responsibilities:

Executive Sponsor: Marilyn Caselli
Team Lead(s): Michael Murphy

Scope: Project Purpose, Objectives, and Assumptions:

This is a shared recommendation with DPS Staff. To comply with this recommendation, CECONY and DPS will review CECONY's customer satisfaction survey scoring methodologies and targets, in the context of the current rate proceedings (Cases 16-E-0060 and 16-G-0061) and Case 15-M-0566, In the Matter of Revisions to Customer Service Performance Indicators Applicable to Gas and Electric Corporations. The objective of the review is to develop customer satisfaction scoring methodologies and associated targets for the Company that provides the best information possible. Reviewing the methodologies in the context of Case 15-M-0566 allow for the review of any statewide considerations arising in that proceeding that may have implications for CECONY's methodology. The deliverable that will result from this implementation plan is a PSC Order in one of the aforementioned cases, which, depending on the outcome of the survey review by Staff and CECONY, may or may not include discussion of CECONY's customer satisfaction surveys.

Work Plan:

Initial Discussion with Staff – CECONY will meet with DPS Staff to scope out the activities/issues that follow from this recommendation, and agree upon an approach for addressing this topic in the CECONY rate case, as well as a timeline for working sessions, if needed.

Follow-up Activities Based on Initial Discussion with Staff – additional activities associated with this implementation plan will be developed and executed based on the outcome of the initial discussion with Staff.

Deliverables/Milestones:

Deliverable/Milestone	Start Date	Delivery Date	Comments
Initial meeting with DPS Staff	June 1, 2016	June 30, 2016	Complete

Cost Benefit Analysis:

CECONY's initial discussion with Staff may result in nominal costs. The cost for CECONY's survey vendor to prepare for and participate in rate case/working group discussions regarding the survey methodology is \$10,000. This cost estimate does not include the potential cost to change the survey methodology and associated survey instruments, if required.

Risk Analysis:

Inability to reach agreement with multiple parties involved in the rate case process, to the extent that survey methodology becomes an issue in settlement discussions or in a litigated case.

February 13, 2017 Update:

This recommendation is complete.

The Company met with DPS Staff on July 28, 2016 to discuss how Recommendation 31 could be addressed in the Company's rate proceeding (Cases 16-E-0060 and 16-G-0061), and the substantive overlap between Recommendation 31 and the PSC's consideration of generic customer satisfaction survey issues in Case 15-M-0566, In the Matter of Revisions to Customer Service Performance Indicators Applicable to Gas and Electric Corporations. The Company pointed out that Staff's Draft Revised Customer Service Metrics filed in Case 15-M-0566 contemplate changes to utility customer satisfaction surveys that echo the issues identified in Recommendation 31.

Given this overlap in scope, Staff and the Company agreed that the substance of Recommendation 31 will be addressed in Case 15-M-0566. The Joint Proposal filed in CECONY's rate proceeding on September 19, 2016 memorializes this common understanding: "The Parties acknowledge that issues related to utility customer satisfaction surveys are being addressed in Case 15-M-0566..."

Consistent with the Joint Proposal, the Company will address the themes embodied in this recommendation in Case 15-M-0566. Recommendation 31 is therefore complete.

June 13, 2017 Update:

This recommendation has been deferred to Case 15-M-0566.

October 13, 2017 Update:

This recommendation has been deferred to Case 15-M-0566.

X. Shared Services and Affiliate Transactions

Recommendation Number 32: X-1

Recommendation: Replace the spreadsheet-based affiliate billing process with an Oracle-based or other compatible based billing system.

Roles and Responsibilities:

Executive Sponsor: Robert Muccilo
Team Lead(s): Janet Murray

Scope: Project Purpose, Objectives, and Assumptions:

Pursuant to the following General Accounting Procedures (GAP) - GAP-006 CEI Accounting for Affiliate Transactions with CEI; GAP-008C Accounting for Transactions between the Regulated and Unregulated Affiliates and GAP-040C Accounting for Transactions between CECONY and ORU, the Company is required to allocate the provision of goods and services among the entities (Affiliates). Each company employs cost allocation procedures to ensure that all costs incurred on the other's behalf are appropriately identified and assigned on a fully loaded cost basis.

The Affiliate Billing Process involves identifying these services and costs between the Affiliates. This process is currently performed manually. The current process includes extracting the expenditures charged on designated projects for each Affiliate from Oracle Project Accounting (PA), calculating the overheads associated with the direct charges, developing a summary of allocations and preparing PA journal entries – all prepared manually within spreadsheets.

The purpose of this project is to design and implement a solution to replace the spreadsheet based Affiliate Billing process. The Company proposes to automate the process by programmatically identifying and extracting the labor charges, calculating direct/indirect costs and overheads, allocating the calculated amount to specific accounts and rendering a billing for such services to the appropriate Affiliate(s).

The Accounts Receivable (AR) Business team creates Affiliate Bills for the below entities for each General Ledger (GL) Period:

- CECONY to O&R (Orange and Rockland)
- CECONY to CSS (Competitive Shared Services)
- CECONY to CEE (Con Edison Energy, Inc.)
- CECONY to CES (Con Edison Solutions, Inc.)
- CECONY to CED (Con Edison Development, Inc.)
- CECONY to CEI (Con Edison, Inc.)
- CECONY to TRANSCO (New York Transco, LLC.)
- CECONY to Consolidated Edison Transmission, LLC.
- CECONY to Con Edison Gas Pipeline & Storage, LLC.
- O&R to CECONY (Consolidated Edison of New York, Inc.)

The solution would require a report which would capture, detail and record all costs for a specific project and task for the concerned Affiliate. The report will deliver two sets of data and be in a format which allows download into a spreadsheet based system as the data is used by the Corporate Accounts Receiving and Billing (CARB) team for additional reporting. The first dataset would be the final Journal Entry Values which are calculated in the process. The second report would be for the Summary of Allocation Costs.

This automation would enable the AR business team to generate the Affiliate Bills directly from the system without the need for any manual intervention for standard billing elements. Based on the affiliate bill and GL period the user chooses, the system will calculate and list all necessary costs charged to the designated account in a report for the users to verify. Once verified, users can proceed to create expenditures and run PA processes to generate invoices for the Affiliates.

Assumptions:

- The proposed solution can only automate the calculation of recurring billing matters. Any one-off/non-recurring billing entries will remain a manual calculation effort to be performed by the CARB team. These are expected to be minimal.
- The solution will provide a user friendly mechanism for the CARB team to enter these monthly one-off manual entries into the Oracle system so that they can be programmatically included in the PA journal calculation.
- The maintenance of the values required for various calculations within the process (i.e. annual rates and percentages) will be the responsibility of the Corporate Accounting Business users.

Work Plan:

The process will be implemented in two phases.

Phase I will include extracting direct charges and other expenses against designated projects for each Affiliate Bill as well as calculating the expenses based on the costs incurred/charged against billing orders, processing the data and generating a report which would display the summary of journal entries calculated. Once the report has been verified by Corporate Accounting, Phase II will be initiated which will create the PA journal - expenditures (credits and debits) - to record Administrative and General expenses incurred on behalf of the Affiliate and give credit to non-corporate services departments for services performed on behalf of the Affiliate.

For all monthly entries which are not wholly identifiable by project and task or other fixed data sources, it will be the responsibility of the CARB team to:

- Identify these monthly one-off charges and perform any off-line calculations
- Enter the charges into Oracle EBS using the mechanism provided

Once the process has become established, Corporate Accounting may utilize the automated data processing program. A request set would be created to sequentially perform their post-import

processing steps, preparing a draft invoice ready for their review. This would be a configuration change and require no programming or code modification.

This automated process may be extended to include new Affiliate companies as necessary.

PHASE I:

Data Derivation, Calculation, Reporting

- Automate the selection, calculation and summarization of cost (available in PA)
- Present in report format providing information comparable to current worksheets
- Provide report sufficient to prepare the allocation PA journal entry

PHASE II:

Automated PA Journal preparation and submission

- Remove the manual intervention
- Journal entries will flow through the current workflow approval routing
- Provide supporting reports

Automated Data Processing

- Streamline processing activities - Distribute cost, Generate revenue and **draft** invoice with a single request

Deliverables/Milestones:

Deliverable/Milestone	Start Date	Delivery Date	Comments
Deliver draft Functional Design document (FD) for AppDev and Corporate Accounting review	April 1, 2016	May 16, 2016	Complete
FD walk-through meetings	June 10, 2016	June 24, 2016	Complete
FD feedback deadline – Corporate Accounting	June 27, 2016	July 1, 2016	Complete
FD feedback deadline – AppDev	July 5, 2016	July 8, 2016	Complete
Deliver Functional Design document (FD) for review	July 15, 2016	July 15, 2016	Complete
Approved FD	July 15, 2016	July 22, 2016	Complete
Approved Technical Design Document (TD)	July 25, 2016	August 12, 2016	Complete

Build Complete/ Migrated code ready for test (3 cycles)	August 12, 2016	September 30, 2016	Complete
CARB Testing (through 3 cycles) Complete – Signoff	October 3, 2016	February 10, 2017	Complete
Production Migration Approval	February 13, 2017	February 25, 2017	Complete
Update GAPs, as necessary	October 3, 2016	February 15, 2017	Complete

Cost Benefit Analysis:

The preliminary estimated cost is approximately \$260,000. This effort is expected to require approximately 1,730 of combined internal and external labor hours at approximately \$150.00 per hour. The cost to implement this recommendation will be allocated to all of the affiliates.

There are monetary and non-monetary benefits associated with this plan. One employee in CARB spends 24 hours per month on the Affiliate Billing process. The CARB team estimates that with automation, this will be reduced to 12 hours per month for a savings of \$10,000 per year. The cumulative savings over a five year period is \$50,000. The non-monetary benefit to automating the process is to reduce workload and improve operational efficiency, increase accuracy, reduce risk associated with user input, and improve controls. The non-monetary benefits justify this expense.

Risk Analysis:

Automation of the Affiliate Billing process reduces the opportunity for manual intervention which could lead to unforeseen errors in calculations.

February 13, 2017 Update:

Functional and technical design documentation (FD and TD respectively) was prepared by the Oracle Support Team (OST) and Applications Development Team (APPDEV) after requirements gathering sessions with the Corporate Accounts Receiving and Billing (CARB) team. Upon approval of the FD and TD, APPDEV developed and deployed the automated Affiliate Billing program for testing.

The CARB testing milestone is complete. Three cycles of testing were executed; development, test and quality assurance (QA). A user guide was created which will continue to be refined as we receive feedback from the CARB team regarding its usability, accuracy and completeness. Training, review and working sessions were held as required to support the CARB team's test efforts. The final QA test cycle validated that all remediated issues were updated within the code and that the program functioned according to requirements.

The new Affiliate Billing process was approved for Production and migrated on January 21, 2017.

June 13, 2017 Update:

This recommendation is complete.

The final milestone included updating GAPs, as necessary. Changes were made to three GAPs (GAP-006 CEI, GAP-008C and GAP-040C) associated to the new automated affiliate billing process and revisions were submitted to Accounting Research & Procedures (ARP) for review on March 28, 2017. Final approval was received in April following additional changes required for Con Edison Transmission (CET).

October 13, 2017 Update:

This recommendation is complete and is pending Staff review and closeout.

Recommendation Number 33: X-2

Recommendation: Develop a corporate cost allocation manual that provides an overview of all allocations in the CEI enterprise and specific account numbers relating back to the shared services organization.

Roles and Responsibilities:

Executive Sponsor: Robert Muccilo
Team Lead(s): Grace Scarpitta

Scope: Project Purpose, Objectives, and Assumptions:

Develop a corporate cost allocation manual that provides an overview of all allocations in the CEI enterprise and specific account numbers relating back to the shared services organization.

Work Plan:

Corporate Accounting is engaging an outside vendor to assist in developing the corporate cost allocation manual that will provide an overview of all allocations in the CEI enterprise and specific account numbers relating back to the shared services organization. All companies in the CEI enterprise will participate in the development of the manual.

Deliverables/Milestones:

This manual will be developed concurrently with the affiliate billing automation project (Recommendation X-1), which is expected to be completed in the 4th quarter of 2016, with a 1st quarter 2017 implementation. This manual will be completed by October 2016.

Deliverable/Milestone	Start Date	Delivery Date	Comments
Issue Purchase Order to vendor	May 5, 2016	May 11, 2016	Complete
Kick-off meeting with vendor	June 1, 2016	June 30, 2016	Complete
Draft manual	July 1, 2016	September 30, 2016	Complete
Obtain SME concurrence	October 1, 2016	October 10, 2016	Complete
Finalize manual	October 11, 2016	October 31, 2016	Complete

Cost Benefit Analysis:

The estimated cost of this recommendation is \$55,000, including \$50,000 in vendor costs and approximately 100 hours of internal labor @\$50.00 per hour.

Benefits: Provides additional controls and transparency for affiliate billing.

Risk Analysis:

The absence of a corporate cost allocation manual could lead to a lack of uniformity in the affiliate billing process.

February 13, 2017 Update:

This recommendation is complete.

The Company has developed a corporate cost allocation manual that provides an overview of all allocations in the CEI enterprise and specific account numbers relating back to the shared service organization.

Corporate Accounting engaged PA Consulting to assist in developing the corporate cost allocation manual. This manual has been reviewed by all companies in the CEI enterprise.

The manual includes CEI's cost allocation principles, an overview of the process flows, descriptions of products and services provided to affiliates, the cost allocation methodology, time reporting procedures, the recording of transactions and intercompany invoicing, and reporting. In addition, included in the appendices are the following: service agreements, General Accounting Procedures on the cost allocations, organization charts, list of cost pools, the three-factor formula allocation factors calculation, CEI monthly invoice sample, Officers, Directors and Admin Staff allocations, and the overhead rate allocations.

June 13, 2017 Update:

This recommendation is complete and is pending Staff review and closeout.

October 13, 2017 Update:

This recommendation is complete and is pending Staff review and closeout.

Recommendation Number 34: X-3

Recommendation: Replace the three-factor allocation formula for CEI costs with a more appropriate formula.

Roles and Responsibilities:

Executive Sponsor: Robert Muccilo
Team Lead(s): Grace Scarpitta

Scope: Project Purpose, Objectives, and Assumptions:

At the time the CEI Holding Company was formed, the Company adopted a three factor allocation using assets, payroll, and gross margin. This three factor formula was based on Cost Accounting Standard 403, which allows for a special allocation, other than an allocation based on the average of revenue, assets, and payroll, if such special allocation is commensurate with the benefits received.

When the CEI Holding Company was formed, the Company believed that the three factor formula that included revenues produced an allocation that was not commensurate with the benefits that each of the affiliates would receive.

With the pending sale of the retail energy supply business of CEI's competitive energy businesses, the Company believes that the use of revenues will no longer result in the disproportionate allocation of costs to the affiliates. Based on this, the Company agrees to revise the allocation of costs going forward based on a three factor formula using the average of assets, payroll and revenues.

Work Plan:

Update the three tier allocation formula and GAP, and implement within 30 days of PSC approval.

Deliverables/Milestones:

Implement the three-tier allocation factor of revenues, assets and payroll once approved.

Deliverable/Milestone	Delivery Date	Comments
Determine three-tier allocation	June 30, 2016	Complete
Update General Accounting Procedure with three-tier allocation formula	Within 30 days of PSC approval	Complete
Include three-tier allocation formula in allocation manual	Once the manual is complete and PSC approval is received.	Complete

Cost Benefit Analysis:

Benefit: The revised three-part formula will reflect anticipated changes to the corporate structure and account for shared services provided to the competitive energy businesses. Internal cost to update the formula is minimal.

Risk Analysis:

N/A

February 13, 2017 Update:

This recommendation is complete.

At the time the CEI Holding Company was formed, the Company adopted a three factor allocation using assets, payroll and gross margin. With the sale of the retail energy supply business of CEI's competitive energy businesses, the Company now believes that the use of revenues instead of gross margin in the three factor allocation is appropriate.

Accordingly, in CECONY's electric and gas Joint Proposal, the use of revenue was proposed and accepted by NYSPSC staff and the other parties. The Commission approved the Joint Proposal on January 25, 2017.

The General Accounting Procedure with the three-tier allocation formula has been updated to reflect the new formula which became effective January 1, 2017. In addition, the formula has been updated in the Affiliate Cost Allocation Manual.

June 13, 2017 Update:

This recommendation is complete and is pending Staff review and closeout.

October 13, 2017 Update:

This recommendation is complete and is pending Staff review and closeout.

Appendix C: Recommendations Cost Matrix

#	Chapter	Recommendation	Cost (\$)*	C/O/B	CECONY/ O&R Split (% or \$)	One-Time/ Ongoing	Contractor vs. In-House
1	III-1	Increase the level of sharing of best practices between O&R and CECONY by developing a protocol, and explore additional opportunities for potential cost savings resulting from standardized process or economies of scale.	\$25,000 + Benchmarking	B	92.9% CECONY/7.1% ORU	One-Time	\$25,000 (In-House) + Benchmarking (Contractor)
2	III-2	Regarding the Chief Executive Officer (CEO) Certification process:					
		• Develop appropriate processes to disseminate modifications or updates to policies, procedures and controls as a result of Internal Audits and QA reviews to the appropriate CEO Certification representative in order to update matrices as required.					
		• Individuals performing Internal Audits and QA reviews should be aware of the CEO Certification policies, procedures and controls that may be within the scope of the planned review.					
		• On a going forward basis, using a risk-based prioritization process, revisit critical policies, procedures and controls to ensure they properly address the requirements to which they have been assigned. Consider adding monitoring requirements to safety related procedures.	\$67,000	B	92.9% CECONY/7.1% ORU	One-Time	In-House
3	III-3	DPS and the Joint Utilities should meet to clarify all parties' understanding of the requirements of the CEO Certification process.	Minimal	B	N/A	N/A	N/A
4	III-4	Replace one or more of the Named Fiduciaries with other employees not directly involved in management of the Consolidated Edison Retirement Plan Trust. The replaced officers, CFO and Chief Accounting Officer, could still provide his/her expertise as the senior officer in his/her area of responsibility. The newly appointed officers could meet the obligations of Named Fiduciaries and draw on the expertise of the senior officers who now serve as Named Fiduciaries.	\$60,000	B	92.9% CECONY/7.1% ORU	On-Going	Mix of In-House and Contractor (outside training)
5	IV-1	Develop comprehensive and integrated electric distribution system plans for CECONY and for O&R that utilize a consistent approach to asset management, regulatory programs (including Reforming the Energy Vision (REV)) and system growth. The initial structure and content of the plans should be included in the Distributed System Implementation Plans (DSIPs) to be submitted to the Commission mid-2016.	\$25,000	B	CECONY and O&R will direct charge: \$16,700- CECONY, \$8,300- O&R	One-Time	In-House
6	IV-2	Develop and implement the capital program optimization model across both companies and organizational units in a consistent manner.	\$62,500	B	92.9% CECONY/7.1% ORU	One-Time	In-House
7	IV-3	Develop a CECONY comprehensive secondary electric network asset management plan.	\$1,250,000 (over next 2 years)	C	100 % CECONY	One-Time	Mix of In-House and Contractor
8	IV-4	Reevaluate the projected costs and timeline of the Accelerated Main Replacement program for consistency with project objectives.	Minimal	C	N/A	N/A	N/A
9	IV-5	Improve competitive procurement levels to reacquire and exceed previous levels of performance.	\$990,250	B	92.9% CECONY/7.1% ORU	One Time	\$536,250 (In-House) and \$454,000 (Contractor)
10	VI-1	Develop a consistent approach to program and project management throughout CECONY and O&R. Establish and enforce formal project management control procedures, especially regarding instances when CECONY capital projects are transferred between organizations.	\$600,000 + Portfolio/Project Management System Changes + Maintenance Costs	B	92.9% CECONY/7.1% ORU	On-Going	\$600,000 (In-House) and Other costs (Contractor)
		Establish an organizational unit responsible for standardizing project management practices to accomplish this effort.					
11	VI-2	Charge actual CECONY engineering and construction oversight costs directly to capital projects so the booked capital costs reflect the actual costs of the project.	\$126,000 + Cost of Benchmark Study (TBD) + Implementation Costs (pending results of Feasibility Study)	C	100% CECONY	One-time (at this time and pending feasibility study)	\$126,000 (In-House) and Other Costs (Mix of In-House and Contractor)
12	VI-3	Revise CECONY processes and procedures to require that estimated and booked project costs include all costs.	\$24,000	C	100% CECONY	One Time	In-House
13	VI-4	Update CECONY contracting and procurement procedures to assign roles and responsibilities in the event that Bid Check estimate is the low bid.	Minimal	C	92.9% CECONY/7.1% ORU	One Time	In-House

*Note: Labor Costs associated with recommendations do not include overheads

#	Chapter	Recommendation	Cost (\$)*	C/O/B	CECONY/ O&R Split (%)	One-Time/ Ongoing	Contractor vs. In-House
14	VI-5	Establish a process to ensure that there is a CECONY Project Manager assigned to manage the work when a CECONY project is performed by NYC contractors.	Minimal	C	N/A	N/A	N/A
15	VI-6	Formalize the O&R contractor oversight rotation policy and revise O&R contract management procedures to provide more detailed guidance regarding the use of the Contractor Oversight System.	Minimal	O	N/A	N/A	N/A
16	VI-7	Perform a formal review of O&R change orders on a semi-annual basis to identify and distribute lessons learned.	Minimal	O	N/A	N/A	N/A
17	VII-1	Continue CECONY Gas Operations work management process improvement activities in accordance with its Gas IT Roadmap.	\$110,748,000 (over 5 years, to 2020). The total estimated cost is not anticipated to change, however, because of the schedule extension to 2021, the cash flow must be updated to reflect this schedule change.	C	100% CECONY	One-Time, currently in the Rate Case	Mix of In-House and Contractor
18	VII-2	Develop formal reports on CECONY and O&R trends in work load levels, workforce productivity and utilization.	Implementation Cost: TBD	B	CECONY and O&R will direct charge	One-Time	TBD
19	VII-3	Establish formal processes to use work management data for annual resource planning as part of the annual business planning activities of CECONY Gas Operations, Substations Operations, Transmission Operations and Steam Plants.	\$175,000 + Cost of Benchmark Study (TBD) + Implementation Costs (pending results of Feasibility Study)	C	100% CECONY	One-time (at this time and pending feasibility study)	\$175,000 (In-House) and Other Costs (Mix of In-House and Contractor)
20	VII-4	Develop formal work management practices for CECONY and O&R engineering organizations. Where possible, leverage the results of CECONY Central Engineering's Continuous Improvement Program. The work management systems should have appropriate system tools to support the various individual and distinct engineering functional processes.	\$175,000 + Cost of Benchmark Study (TBD) + Implementation Costs (pending results of Feasibility Study)	B	CECONY and O&R will direct charge	One-time (at this time and pending feasibility study)	\$175,000 (In-House) and Other Costs (Mix of In-House and Contractor)
21	VII-5	Develop overtime targets for CECONY and O&R based on economic analyses and verified industry norms.	Implementation is deferred to the Staffing Audit	B	N/A	N/A	N/A
22	VII-6	Develop formal studies and provide updates of contractor versus in-house costs every three to five years, and use the results of these studies in CECONY and O&R resource planning to determine the optimal use of contractors.	Implementation is deferred to the Staffing Audit	B	N/A	N/A	N/A
23	VIII-1	Modify the O&R performance management process as follows:					
		<ul style="list-style-type: none"> Modify the employee development key performance indicators (KPIs) to be more reflective of the objective, rather than an evaluation of Human Resources. 	Minimal	O	N/A	N/A	N/A
		<ul style="list-style-type: none"> Establish more aggressive ATIP KPIs targets that are realistic, but not too easily attainable. 					
		<ul style="list-style-type: none"> Increase the frequency of communication of performance objectives to the overall employee base and ensure that the use of indices is not creating any confusion or minimizing the significance of individual measures. 					
24	IX-1	O&R needs to complete its review of current processes to determine why the error occurred in the service turn on for a commercial customer which took almost one month to complete and implement necessary changes.	Minimal	O	N/A	N/A	N/A

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#	Chapter	Recommendation	Cost (\$)*	C/O/B	CECONY/ O&R Split (%)	One-Time/ Ongoing	Contractor vs. In-House
25	IX-2	CECONY has proposed the following solution to address the issues with the denial of service notification for customers that do not currently have service (i.e., service "cold"). NorthStar concurs with the proposed solution, but notes that CECONY must also address the denial of service and document retention requirements for residential and non-residential denials of service required by Parts 11 and 13 of 16 NYCRR for applicants that currently have service (i.e., service "hot").					
		<ul style="list-style-type: none"> In order to establish processes and controls so that Turn-On denial letters are sent in all cases where service is not already on at the premise, CECONY proposes that a training document be sent to all Customer Service Representatives reminding them of the Turn On denial process. 					
		<ul style="list-style-type: none"> In addition, as an interim additional control measure, reports of all of the Turn-On Deny notations will be generated and produced on a daily basis for review. Customer Assistance staff will review the list to validate that the Turn-On Deny letter was sent to the applicant, and take action as necessary. 					
		<ul style="list-style-type: none"> In the longer term, an automated solution will be evaluated to improve controls. A cross-functional team will be assembled to develop this automated solution and to evaluate feasibility, costs and prioritize implementation. It is expected that a recommendation for an automated solution will be available by third quarter 2016. 	\$53,350	C	100% CECONY	One-Time	In-House
		<ul style="list-style-type: none"> Currently, in situations where service is "hot" (i.e., already on at the premise), a control exists if the customer continues to use service but does not contact the company. Accounts registering usage on a meter after a cycle reading that do not have a customer of record generate inactive advance notices which are sent to the location. There is currently a group in Field Operations dedicated to reviewing accounts with a Turn-Off field order, which is generated after two cycle readings register usage on a meter. 					
26	IX-3	Modify O&R's Joint Procedures – 0011 "Customer Deposits for Gas and Electric Service" as follows:					
		<ul style="list-style-type: none"> Eliminate the section that allows O&R to charge a deposit for a new residential customer that is considered a credit risk. 					
		<ul style="list-style-type: none"> Modify the language regarding deposit payment arrangements to allow the customer to pay in 12 monthly installments. 					
		<ul style="list-style-type: none"> Eliminate the language that indicates that residential customers that cannot pay the deposit in full will either be turned off or not turned on. 	Minimal	O	N/A	N/A	N/A
		<ul style="list-style-type: none"> Clarify that the payment of the security deposit in full as a condition of service for non-residential customers is applicable to new customers only. 					
27	IX-4	Make the following modifications to O&R's collections notices and website:					
		<ul style="list-style-type: none"> Once current stock has been depleted or other changes warrant, modify O&R's "Your Rights and Responsibilities as a Commercial Customer of Orange & Rockland" to specifically inform non-residential customers that they may request a review to ensure a required security deposit is not excessive. 	Minimal	O	N/A	N/A	N/A
		<ul style="list-style-type: none"> Modify O&R's residential customer broken agreement letter to include the address and telephone number of the appropriate social services office or the local social service information number, as required by Part 11.10 of HEFPA. 					
		<ul style="list-style-type: none"> Correct the portion of O&R's web page describing the requirements for enrollment into the residential levelized payment plan to clarify that customers may enroll at any time. 					
28	IX-5	Modify CECONY's CSR training (DR 201-C, Attachment 12, p. 9-14) to be consistent with the security deposit installment plan requirements of HEFPA. According to a 2/18/16 email from CECONY this issue has already been corrected in response to NorthStar's inquiry of 2/17/16. NorthStar has not verified the correction.	Minimal	C	N/A	N/A	N/A

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#	Chapter	Recommendation	Cost (\$)*	C/O/B	CECONY/ O&R Split (%)	One-Time/ Ongoing	Contractor vs. In-House
29	IX-6	Evaluate and document the following modifications to CECONY's bills and collections notices:					
	IX-6.1	• Modify the bill notice section to better highlight critical collections-related bill messages.	\$108,300	C		One-Time	In-House and Contractor
	IX-6.2	• Correct CECONY's demand rate bill formats to correctly display the rates.	\$15,700	C	100% CECONY	One-Time	In-House and Contractor
	IX-6.3	• Modify CECONY's Special Agreement Offer (SAO) postcard to contain language regarding financial need, the \$10 minimum offer or the customer's ability to modify the terms based on changes in their financial circumstances.	\$6,700	C		One-Time	In-House and Contractor
30	IX-7	Determine the cost of limiting CIMS access (O&R) such that CSRs cannot remove the LSE code on a customer account (should be performed by a supervisor or other applicable group) or manually issue a lock for non-payment order on an EBD or LSE customer account. Alternatively, develop reporting to determine if such an event has occurred.	\$48,125	O	100% O&R	One-Time	Contractor
31	IX-8	As part of the current rate case, CECONY and the DPS should review CECONY's customer satisfaction scoring methodologies and associated targets to ensure the indices provide the best information possible.	\$10,000 + Possible Survey Modifications	C	100% CECONY	One-Time	Contractor
32	X-1	Replace the spreadsheet-based affiliate billing process with an Oracle-based or other compatible based billing system.	\$260,000	B	89.5% CECONY /6.8% ORU/ 3.7% Affiliates	One-Time	In-House and Contractor
33	X-2	Develop a corporate cost allocation manual that provides an overview of all allocations in the CEI enterprise and specific account numbers relating back to the shared services organization.	\$55,000	B	89.5% CECONY /6.8% ORU/ 3.7% Affiliates	One-Time	\$5,000 (In-House) and \$50,000 (Contractor)
34	X-3	Replace the three-factor allocation formula for CEI costs with a more appropriate formula.	Minimal	B	N/A	N/A	In-House
35	X-4	Establish CEI guidelines or clarify the Code of Conduct before appointment of future executives to the Boards of CEBs to prohibit executives with current experience in roles at the utilities related to the business engaged in by the CEB from serving on their Boards.	Minimal	B	N/A	N/A	In-House
36	X-5	Follow CECONY internal procedures regarding oversight of affiliate transactions. Affiliate transactions should be a part of the responsibilities of the Regulatory Compliance Committee.	Minimal	C	100% CECONY	One-time	In-House
*Note: Labor Costs associated with recommendations do not include overheads							