FOR CONSIDERATION
December 16, 2020

TO: The Board of Trustees

FROM: Thomas Falcone

SUBJECT: Consideration of the Adoption of PSEG Long Island Implementation Plans for Isaias Task Force Report Tier 1 Recommendations and Update on Status of DPS Recommendations

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Requested Action

The Board of Trustees (the "Board") of the Long Island Power Authority ("LIPA") is requested to approve a resolution adopting certain PSEG Long Island Implementation Plans for the Isaias Task Force (the "Task Force") Tier 1 Recommendations, which resolution is attached hereto as **Exhibit "A"**.

Background

On Tuesday, August 4, 2020, Tropical Storm Isaias landed on Long Island with rain and wind gusts of up to 70 miles per hour. The resulting damage to the electrical system caused approximately 646,000 customer outages.

On August 5, LIPA's Chief Executive Officer initiated an independent review of the circumstances and root causes that led to well-documented lapses in PSEG Long Island's storm response. The Task Force was charged with providing actionable recommendations and overseeing PSEG Long Island's remediation activities. LIPA committed to reporting the Task Force's findings and recommendations to the LIPA Board of Trustees and the public in a 30-Day Preliminary Report, 90-Day Interim Report, and 180-Day Final Report.

The Task Force presented the 30-Day Report to LIPA's Board of Trustees at the September 23, 2020 Board Meeting and released it to the public. Because of the urgency of the immediate threat of another major storm, the 30-Day Report focused on the failures of PSEG Long Island's information technology and communication systems and their proximate causes.

On November 13, DPS provided a recommendation (the "DPS Recommendation") to the LIPA Board as a result of its ongoing investigation of PSEG Long Island's storm response. DPS Staff identified more than 70 potential violations of PSEG Long Island's ERP. The DPS recommended, among other things, that LIPA:

- evaluate options to terminate PSEG Long Island as LIPA's Service Provider;

- declare PSEG Long Island's poor performance during Isaias as a first failure of the Major Storm Performance Metric as defined in the OSA; and
- seek to either terminate or renegotiate the OSA to enable greater oversight by LIPA and DPS.

The Task Force presented the 90-Day Report to the Board at the November 18, 2020 Board Meeting. The 90-Day Report expanded on the findings of the 30-Day Report and addresses broader questions on the effectiveness of PSEG Long Island's management of utility operations.

As set forth in Appendix 2 and Appendix 3 of the 90-Day Report, the Task Force provided nearly 100 recommendations for the Board's consideration (the "Task Force Recommendations"). The Task Force Recommendations were designed to, among other things, (i) Change Management Incentives and Accountabilities; (ii) Reform Information Technology and Emergency Management; and (iii) Strengthen LIPA's Oversight. The Task Force Recommendations are tiered based upon priority. The tiered system allows LIPA and PSEG Long Island to either implement or present implementation plans for the most critical recommendations on an accelerated basis.

By Resolution No. 1568, dated November 18, 2020, the Board directed the Task Force, together with PSEG Long Island, to implement the Task Force Recommendations, including the creation of Implementation Plans to be completed within the tiered structure as set forth in Appendix 2 and Appendix 3 of the 90-Day Report; and to report to the Board at least quarterly until such Task Force Recommendations are fully implemented

Discussion of Implementation Plans

On December 7, 2020, PSEG Long Island submitted Implementation Plans for the Tier 1 Recommendations to the Task Force for review. The Task Force provided comments on each Implementation Plan on December 9, 2020 and asked for revised Plans to be submitted on December 11. The Task Force recommends certain of the revised Tier 1 Plans submitted on December 11 be resubmitted for the Board's review at the January 2021 meeting with Task Force comments addressed, as shown in **Exhibit "B"**. The Task Force recommends the Board adopt the remaining Implementation Plans as attached hereto as **Exhibit "C"**.

The Implementation Plans for those recommendations designated as Tier 2 shall also be completed for the Board's January 2021 meeting. The Implementation Plan for those recommendations designated as Tier 3 shall be completed simultaneous with the Task Force's completion of the 180-Day Report in February 2021. Thereafter, the Task Force shall submit a Status Report to the Board no less than quarterly that summarizes the status of the Implementation Plans for each Task Force Recommendation.

Status of DPS Recommendation

At the November 18, 2020 meeting, the Board directed LIPA's Chief Executive Officer to report on actions taken in response to the DPS Recommendation. The staff has taken the following actions:

- Served PSEG Long Island a notice of default on material contractual obligations;
- Evaluated options that would follow a decision to terminate PSEG Long Island as LIPA's Service Provider, which evaluation has separately been submitted to the Board;
- Commenced litigation to compel specific performance to deploy a fully functional Outage Management System, telephone system, and Business Continuity Plans;
- Declared PSEG Long Island's poor performance below the Minimum Performance Level of the Major Storm Performance Metric (the Board made such finding at the November 18 meeting);
- Initiated an audit to identify and evaluate costs incurred by PSEG Long Island and LIPA for systems that did not function properly, did not benefit customers, or impeded restoration efforts; and
- Referred the results of the Task Force investigation to the New Jersey Board of Public Utilities.

Recommendation

The issues identified by the Task Force's investigation, as well as the DPS' separate investigation, remain urgent. Based upon the foregoing, I recommend approval of the above requested action by adoption of a resolution in the form attached hereto.

Attachments

Exhibit "A" Resolution
Exhibit "B" Summary of Implementation Plans
Exhibit "C" Tier 1 Implementation Plans

Exhibit "A"

RESOLUTION ADOPTING CERTAIN PSEG LONG ISLAND IMPLEMENTATION PLANS FOR ISAIAS TASK FORCE TIER 1 RECOMMENDATIONS

WHEREAS, on Tuesday, August 4, 2020, Tropical Storm Isaias landed on Long Island with rain and wind gusts of up to 70 miles per hour, resulting in damage to the electrical system and causing approximately 646,000 customer outages; and

WHEREAS, pursuant to Section 1020-f(y) of the Public Authorities Law, General Powers of the Authority, LIPA, in part, may "make any inquiry, investigation, survey or study which the authority may deem necessary to enable it effectively to carry out the provisions of this title. . ."; and

WHEREAS, pursuant to Section 4.4(16), Rights and Responsibilities of LIPA, of the Amended and Restated Operations Services Agreement ("OSA"), LIPA, in part, has the right to "make recommendations to the Service Provider, in each case as may be reasonably necessary or appropriate to perform LIPA's oversight responsibilities and obligations with respect to the provision of Operations Services under this Agreement and as may otherwise be necessary or appropriate to comply with LIPA's legal, contractual and fiduciary obligations. . ."; and

WHEREAS, on August 5, LIPA's Chief Executive Officer initiated an independent review of the circumstances and root causes that led to the lapses in PSEG Long Island's Tropical Storm Isaias storm restoration; and

WHEREAS, LIPA's Chief Executive Officer appointed an Isaias Task Force that was charged with both providing actionable recommendations and overseeing PSEG Long Island's remediation activities; and

WHEREAS, LIPA committed to reporting the Isaias Task Force's findings, observations, and recommendations to the LIPA Board of Trustees and public in a 30-Day Report, 90-Day Report, and 180-Day Final Report; and

WHEREAS, the Task Force presented the 30-Day Report to LIPA's Board of Trustees at the September 23, 2020 Board Meeting and released it to the public; and

WHEREAS, on November 18, 2020, the Task Force presented the 90-Day Report, which provided recommendations to, among other things, (i) Change Management Incentives and Accountabilities; (ii) Reform Information Technology and Emergency Management; and (iii) Strengthen LIPA's Oversight (together with the 30-Day Report recommendations, the "Task Force Recommendations"); and

WHEREAS, by Resolution No. 1568, dated November 18, 2020, the Board directed the Isaias Task Force, in coordination with PSEG Long Island, to submit an Implementation Plan to the Board of Trustees for each Task Force Recommendation; and

WHEREAS, the Task Force has submitted to the Board eight Implementation Plans recommended for the Board's approval; and

WHEREAS, the Task Force Recommendations include that if LIPA and PSEG Long Island renegotiate and cannot reach an agreement on acceptable reforms, or should there be a lack of progress to implement the Isaias Task Force Recommendations, the Board of Trustees consider the exercise of its rights to terminate the OSA with PSEG Long Island before 2025 due to the urgent issues identified by the Task Force's investigation.

NOW, THEREFORE, BE IT RESOLVED, the Board hereby adopts Implementation Plans for the Task Force Tier 1 Recommendations attached hereto as **Exhibit C**; and

BE IT FURTHER RESOLVED, the Board hereby directs PSEG Long Island to amend the remaining Tier 1 Implementation Plans and resubmit such plans to the Task Force for review at the Board's January 2021 meeting.

Dated: December 16, 2020

Date Issued	No.	Recommendation	Tier	End State	Deliverable	Expected Completion Date	Individual PIP Received	Accept or Reject	Comments
		Appendix 2 List Of 90-Day Report							
	Section 4	Customer Communications and Outage Management Systems							
11/18/20	4.02	PSEG Long Island needs to urgently engage qualified expert consultants to guide them through the telephony redesign process.	1	PSEG Long Island has an active contract with qualified telecommunications engineering consultants (with network engineering experience in both PSTN, data networks, and mixed- vendor voice communications systems).	Telecommunications consultants engaged	12/7/20	4.02 PIP Telecom V2	Resubmit in January	PSEG Long Island states that the task is 50% complete. We are not convinced that they have any strong telephony (e.g., PSTN/ILEC, carrier level switching) expertise in the team. LIPA will be conducting interviews/ discussions with consultants identified as experts. Misunderstanding of the objective of the requirement. LIPA requires PSEG Long Island to get independent expert consultants and not to primarily rely on Verizon, Intrado, etc. Weak technical approach, does not identify gaps in current skills/team composition. In a number of PIPs, resources are identified as a constraints/risk. Please submit the revised PIP with detailed technical, project management, and vendor management resource/skills gap analysis and actionable mitigation strategy to address the risk.
11/18/20	4.11	Ensure SCADA sensor reports have priority over other outage reports arriving to the OMS.	1	OMS is fixed and SCADA reports to OMS are properly processed and have priority over other outage reports (e.g. IVR, customer reports)	Consolidate with 4.12 - OMS Configuration Document.	N/A (see 4.12)	n/a	n/a	Consolidate with 4.12 - OMS Configuration Document.
11/18/20	4.12	Systematically test the OMS system to ensure that concrete root causes are identified and remedied. If the errors are due to system defects, then demand accountability from the system vendor for timely fixes. Ensure that root causes, not just symptoms, are addressed.	1	Root causes for failures in the OMS (and feeder systems) have been identified and fixed. OMS functional and technical performance criteria (acceptance criteria) have been established and agreed upon by LIPA and the OMS system passes tests based upon such criteria. This includes and enhances 3.2.2.3, emphasizing systematic root cause identification and validation. Systems deployed to production	Deployed remediated and tested OMS, acceptance test package. Final OMS Configuration Document. All configuration items in CMDB. Business and technical signoff.	12/14/20	4.12_PIP_OMS	Resubmit in January	OMS is still not fixed and no root cause identified 120 days after the storm. PSEG Long Island needs to attack this issue energetically. At this point, PSEG Long Island is, in our opinion, relying on guesses or unscrutinized vendor assertions as to why the system is malfunctioning. No substantive progress reported since the 90-Day Report. They have not added any independent OMS technical experts (e.g., personnel with strong knowledge of PragmaLine / PragmaCAD / OMS internals) to the staff or consulting team, as far as we can see. The proposal to fix OMS in May ignores the urgency of the issue and the risk faced by LIPA customers. The timeline for implementation of 5/2021 is too long in the face of risk. Also, May, 2021 implementation date too close to the next Hurricane season. Please resubmit with a more aggressive schedule and a stronger technical approach.
11/18/20	4.13	After the OMS faults are diagnosed and repaired, thoroughly stress-test the CAD system and the ESB to ensure there are no independent defects affecting either system.	1	CAD and ESB are stress tested against the repaired OMS system and all tests pass established acceptance criteria (as in 4.12).		12/14/20	4.13_PIP_OMS	Resubmit in January	The project plan states that the root cause analysis work began on 10/5/2020, and there has been 0% progress. It appears that PSEG Long Island is now planning to buy hardware to re-platform, and we have not seen any evidence that the new hardware will solve the issues, especially since the tests have not shown any degradation of hardware resources. We recommend that PSEG-LI get some experts and continue to explore software or system configuration or other interconnected systems related root causes instead of throwing hardware at the issue without having a credible theory behind the diagnostic.
11/18/20	4.14	Accelerate the deployment of the mobile application for foreign crews and/or their crew guides ensuring that procedures are integrated into the ERP.	1	Hardware, software, and devices ready for deployment to up to 1000 foreign crew teams. All onboarding process, training, support, and documentation completed. Testing (including load testing) completed.	Deployment record. All configuration items in CMDB. Business and Technical Signoff.	1/31/21	4.14_PIP_Field Mobility	Resubmit in January	Phase 2 does not need to wait for CGI 6.7 and should be started as soon as possible. The plan does not include steps to the design process to roll out the app to mutual aid utilities and contractors. Is any interim process possible to enable the Field app to communicate back to the RDAs or OMS using v5.5? The timeline for implementation of 8/2021 is too long. Please resubmit with a more aggressive schedule and stronger technical approach.
11/18/20	4.16	Install standby hardware resources for use durin	1	Standby resources acquired and deployment tested/exercised. Procedures developed.	System and process documentation for deployed standby hardware resources. All configuration items in CMDB.	2/15/21	4.16_PIP_OMS	Resubmit in January	Standby hardware resources should not be purchased without an understanding of what hardware is really required. Should not assume that re-platforming is necessarily the solution. Also, the timeline for implementation is too long.
11/18/20	4.17	Re-architect the inter-system message queuing applications for greater dynamic stability under highly demanding workloads.	1	Queuing messages in the ESB are setup as asynchronous	All configuration items in CMDB.	2/15/21	4.17_PIP_Digital	Accept w/ Comments	The primary goal of this project is to make the system resilient to heavy load comprising of both new outage requests and requests for status update during storms. Project steps should include development of a requirements document (RTM) and obtain LIPA approval.
11/18/20	4.18	Monitor application performance and error logs of all mission critical application systems, such as OMS, CAD, SCADA, ESB, etc.	1	All mission critical application performance data and logs and error logs are monitored 24x7 in NOC. Processes and procedures including thresholds and corrective or preventative actions are established, documented, tested and trained for. This expands on the specific monitoring recommendations in the 30 Day Report (3.2.2.4, 3.2.2.5, 3.2.2.6, 3.2.2.7, 3.2.2.8 and 3.2.4.2) to encompass structured and documented monitoring of all mission critical systems.	System and process documentation for monitored application systems, including telecom systems. Application monitoring part of NOC operations documentation.	12/14/20	4.18_PIP_OMS	Resubmit in January	More details needed on monitoring objectives, Identification of problem areas, context/base-line, scenarios are missing. The timeline for implementation of 5/21 is too long. Consider establishing priorities within systems/application. Technical approach section is weak. Please resubmit with a stronger technical approach and shorter timeline.
11/18/20	4.19	As part of storm preparation ensure that all application error and debug conditions have been cleared and the system is operating normally.	1	Policy reviewed and documented in IT run book and in ERP.	Policy in IT run book and ERP	12/14/21	4.19_PIP_OMS	Resubmit in January	Project start date should be accelerated. Remove any implied dependency on OMS fixes.
11/18/20	4.20	Accelerate the testing and integration of AMI data to the OMS system.	1	n/a	n/a	n/a	n/a	n/a	Consolidate with 5.4.2.
	Section 5	Emergency Response Planning and Preparation							
11/18/20	5.05	Establish a Crisis Management Team made up of PSEG Long Island and LIPA executives to ensure focus on Long Island operations and sufficient information flow to LIPA to conduct oversight.	1	Crisis Management Team established, Policy on CMT established. Roles and responsibilities defined, included in ERP exercises.	Fully functional CMT.	1/15/21	Project Implementation Plan for AMI Deployment 5.4.2_12.10.20	Accept w/ Comments	Steps labeled 12/10 are shown "in process" while dates are already passed. Timeline looks unrealistically short for a "fully functional CMT" by 1/15/21.
11/18/20	5.07	Expand the Emergency Assistance Agreement with National Grid to include Generation employees.	1	Agreement with National Grid in place and activation policy developed.	Agreement and activation policy.	10/15/20	Project Implementation Plan for Emergency Assistance Agreement 5.07_12.10.20	Accept w/ Comments	Note, this was a request made on August 10 with a request to complete it within 30 days (see Falcone letter to Eichhorn). Additionally, the 30-Day Report asked for the recommendation to be implemented by 10/15. Finally, project plan says that National Grid may not support initiative. LIPA discussions with National Grid indicate support.
11/18/20	5.15	Create an ETR Manager position with staff to monitor OMS systems and ETR quality. The ETR Manager should report to the planning chief within the ICS.	1	ETR manager position reporting to planning chief (or equivalent) is established and hired.	ETR Manager.	1/15/21	Project Implementation Plan - ETR Manager DRAFT 12.10.2020 1745	Accept w/ Comments	The recommendation states, "ETR manager with staff" -- plan should indicate the structure of staff support that the ETR manager will get to execute her duties.
	Section 6	PSEG Lacks Transparency							
11/18/20	6.01	PSEG should review the Isaias Task Force's 90-day Report and issue a CATRR (Causal Analysis Team Review Report) that fully addresses the root causes of its failed storm response, including management shortcomings documented in this Report. PSEG should implement an improved after action analysis process for future storms that has greater rigor.	1	1. Revised CATRR formally released. 2.A policy/ process document for the development of After Action Reports which includes requirement for LIPA review and approval to ensure quality and independence.		12/7/20	Project Implementation Plan 6.01 CATRR	Resubmit in January	A revised CATRR does not need to wait until after OMS is complete. The root causes were management failures are independent of OMS 6.7 fixes, which is a separate project. The plan to develop a new CATRR process is acceptable, although the timeline is lengthy for the amount of work involved.
	Section 7	Leadership and Management							
11/18/20	7.01	Appoint a dedicated "turnaround" CIO at PSEG Long Island.	1	Dedicated Long Island CIO who reports directly to PSEG Long Island's Chief Operating Officer and has budgetary control of PSEG Long Island IT/OT investments appointed. Seasoned CIO with extensive turnaround experience and track record transforming non-performing and Chaotic organizations into high performing IT organizations.	Dedicated LI CIO	2/15/21	Project Implementation Plan - CIO DRAFT 12.10.2020 1745	Resubmit in January	Organization chart still shows CIO reporting to NJ IT, which is not consistent with the recommendation. Risk related to funding separate IT systems is irrelevant and should be deleted.
		Appendix 3 List Of 30-Day Report Recommendations							
	Section 3	Customer Communications and Outage Management Systems							
09/23/20	3.2.1.1	PSEG Long Island should complete implementing the planned telecommunication design changes and conduct additional capacity testing as soon as possible.	1	Blue Sky and Storm Days Telephone System tested and deployed. Detail design, specifications, configuration of the system is documented (as deployed). Periodic testing plan is documented and activated.	Detailed design, specifications, configuration and test documentation for a tested and deployed Blue Sky and Storm Days Telephone System with a periodic testing plan. All configuration items in CMDB.	10/15/20	3.2.1.1_PIP_Telecom v2	Resubmit in January	Note, the 30-Day Report asked for this recommendation to be implemented by 10/15/2020. The plan must include approach, milestones, and dates - All calls originating from the Long Island- end-to-end testing including OMS-Daytime/busy hours testing-modeling other utilities sharing the same infrastructure during a storm (Isaias-Sandy level)-infrastructure/carrier diversity and other risks identified by PSEG staff/ consultants.
09/23/20	3.2.1.2	Improve the pre-storm planning process and include specific communication, coordination, and escalation with the communication service carriers and the HVCA provider before and during the storm.	1	Improved pre-storm planning process is documented (in ERP) and exercised. Agreements with vendors are in place with documented procedures.	Updated ERP and written vendor agreements	10/15/20	3.2.1.2_PIP_Telecom v2	Accept w/Comment	Note, the 30-Day Report asked for this recommendation to be implemented by 10/15/2020. Understand it will be part of the ERP-However PSEG Long Island should develop systems specific Incident Response Plans (subordinate-IRP) - focused on proactively detecting restoration and communication systems events/incidents and respond rapidly to contain, correct, and recover from the incident and minimize disruption to operations. The IRP should include essential roles and responsibilities, action plans and communications plans, and escalation process
09/23/20	3.2.1.3	The existing infrastructure for handling calls within the PSEG Long Island Call Center should be upgraded to a more recent version. PSEG Long Island should modernize its call center infrastructure to a technology that uses the newer "SIP Trunking" technology.	1	Upgraded and modernized Long Island Call Center is deployed and in production.	Project Implementation Documentation (Project Charter, Project Plans, RTM, Test Documentation, Final signoff). All configuration items in CMDB.	10/15/20	3.2.1.3_PIP_Telecom v2	Resubmit in January	Note, the 30-Day Report asked for this recommendation to be implemented by 10/15/2020. Your approach is not consistent with the recommendation. This is one of the most critical customer-facing system. PSEG Long Island is misunderstanding the recommendation. The LIPA Board is directing them to (1) upgrade the existing infrastructure (Cisco) to a more recent version. The current call center infrastructure software version is more than 4 years old (source: Presidio). This needs to be upgraded. (2) the Cisco infrastructure should be immediately upgraded to accommodate SIP trunking.
09/23/20	3.2.1.4	PSEG Long Island should redesign their communications system so that its Billing Line can also be used to receive outage calls in case of a storm emergency. PSEG Long Island has advised us that this recommendation has	1	Billing Line allows configuration to change setting to receive calls in storm emergency. Entire system and process is documented and tested.	Requirements, Design, Design analysis, End-to-end acceptance test (functional, performance), System signoff. Configuration items in CMDB,	10/15/20		PSEG Marked Complete; LIPA to Verify	PSEG Long Island states that the project is complete. LIPA will schedule IV&V Review. LIPA will review completion and report to Board on status in January.
09/23/20	3.2.1.5	PSEG Long Island should develop appropriate capacity monitoring and management processes to support evidence-based demand forecasting and capacity planning.	1	PSEG Long Island has capacity analysis and planning processes in place.	Process and results documentation	10/15/20	3.2.1.5_PIP_Telecom v2	Resubmit in January	The proposed plan does not directly address requirements around logging/monitoring usage and its impact on capacity planning. While various vendors may be involved to furnish this information, the plan needs to identify specific data classes/attributes which will be monitored and should propose how such readings would impact capacity planning. As a result of this, it should specify the steps which PSEG Long Island would take with each of the vendors involved in the overall architecture. Please include the development of a requirements document (RTM) step as part of the project plan. PSEG-LI should also obtain LIPA approval on the requirements and the solution proposed.
09/23/20	3.2.1.6	PSEG Long Island should review the service operation process between PSEG Long Island and Verizon to understand how the major issues as identified are handled.	1	Process for periodic review of service operation between PSEG Long Island and Verizon established. Roles and responsibilities assigned.	Approved process documentation	10/15/20	3.2.1.6_PIP_Telecom v2	Accept w/Comment	Note, the 30-Day Report asked for this recommendation to be implemented by 10/15/2020. Please see comments in 3.2.1.2
09/23/20	3.2.2.1	Complete the design, implementation, and testing of a comprehensive "OMS Storm Mode" of operation for OMS and CAD. Implementing the "Null ETR" functionality for major storms is a first step. Codify this approach and the necessary supporting processes and responsibilities in the Emergency Restoration Plan.	1	Storm Mode characteristics and Operation tested and documented. Training on Storm Mode provided. Activation criteria is established.	Updated ERP	10/15/20		PSEG Marked Complete; LIPA to Verify	PSEG Long Island states that the project is complete. LIPA will schedule IV&V Review. LIPA will review completion and report to Board on status in January.
09/23/20	3.2.2.2	Speedily complete the implementation and testing of "Null ETR" for PSEG Long Island's OMS and connected systems (including HVCA, IVR, Kubra and My Account tools) to enable the use of a Null ETR.	1	NULL ETR technical development and associated business processes are completed and deployed. All processes documented and tested.	System and process documentation for tested and deployed Null ETR capability for OMS and connected systems (including HVCA, IVR, Kubra and My Account tools)	10/15/20	3.2.2.2	PSEG Marked Complete; LIPA to Verify	PSEG Long Island states that the project is complete. LIPA will schedule IV&V Review. LIPA will review completion and report to Board on status in January.
09/23/20	3.2.2.3	Work with CGI to obtain and implement fixes for identified application defects, which could include upgrading to a more recent version of the OMS software.	1	Application defects in the OMS have been identified and fixes obtained, tested and deployed.	Remediated and tested OMS to required capacity.	10/15/20	3.2.2.3_PIP_OMS	Resubmit in January	Note, the 30-Day Report asked for this recommendation to be implemented by 10/15/2020. Please see 4.12. The timeline for implementation of 5/21 is too long.
09/23/20	3.2.2.4	Automate monitoring of OMS and CAD performance at the application level to detect application failures and give administrators an opportunity to adjust the configuration settings that affect performance.	1	Deployed automated application level monitoring of OMS and CAD performance allowing administrators to make adjustments in case of application failures	System and process documentation for tested and deployed automated monitoring	10/15/20	3.2.2.4_PIP_OMS_rev1	Resubmit in January	Note, the 30-Day Report asked for this recommendation to be implemented by 10/15/2020. More details needed on monitoring objectives, Identification of problem areas, context/base-line, scenarios are missing. The timeline for implementation of 7/21 is too long.
09/23/20	3.2.2.5	Automate monitoring of the OMS and CAD at the infrastructure level to detect infrastructure failures and give administrators an opportunity to restore normal operating conditions.	1	Deployed automated infrastructure level monitoring of OMS and CAD performance allowing administrators to take action in case of infrastructure failures	System and process documentation for tested and deployed automated monitoring	10/15/20	3.2.2.5_PIP_OMS	Resubmit in January	Note, the 30-Day Report asked for this recommendation to be implemented by 10/15/2020. The proposed plan only talks about monitoring of the OMS and CAD infrastructure failures. It does not address the corresponding actions which the administrators could take in order to restore normal operations. The plan needs to be updated to include this part where additional tools/procedures may be needed for its achievement. The timeline for implementation of 5/21 is too long.
09/23/20	3.2.2.6	Automate monitoring of inbound SCADA events to the OMS, to be able to detect events or event volumes that cause unresponsiveness and allow operators to restart failed services.	1	Deployed automated monitoring of inbound SCADA events to the OMS allowing administrators to take action in case of events or event volumes that cause unresponsiveness	System and process documentation for tested and deployed automated monitoring	10/15/20	3.2.2.6_PIP_OMS	Resubmit in January	Note, the 30-Day Report asked for this recommendation to be implemented by 10/15/2020. The proposed plan addresses the part about monitoring the inbound SCADA events to the OMS but leaves out the planning for the various steps which operators could take in order to restore the normal operations. In additional it needs to include a task for creation of various load samples for simulating high volume SCADA event scenarios resembling a storm situation. Also, please add step in project plan to develop written requirements for the project (RTM) and obtain LIPA signoff on requirements and proposed solution. The timeline for implementation of 5/21 is too long.
09/23/20	3.2.2.7	Automate monitoring of inbound outage reports to the OMS, to be able to detect and eliminate erroneous reports that may arrive from any source.	1	Deployed automated monitoring of inbound outage reports to the OMS allowing administrators to detect and eliminate erroneous reports from any source.	System and process documentation for tested and deployed automated monitoring	10/15/20	3.2.2.7_PIP_OMS	Resubmit in January	Note, the 30-Day Report asked for this recommendation to be implemented by 10/15/2020. The proposed plan needs to be updated to include tasks for defining what an erroneous outage report looks like, document various use cases under which such erroneous reports make their way into the OMS and how to configure the system so that such cases can be minimized. While an administrator action is the last resort, the team should look at if there is a way to detect and eliminate them via an external process requiring minimal human intervention. Also, please add step in project plan to develop written requirements for the project (RTM) and obtain LIPA signoff on requirements and proposed solution. Also, please add step in project plan to develop written requirements for the project (RTM) and obtain LIPA signoff on requirements and proposed solution.
09/23/20	3.2.2.8	Irrespective of whether the failure mode is corrected within the IVR, the OMS should have automated monitoring of data quality arriving from IVR to detect potentially duplicate or otherwise bad information.	1	Deployed automated monitoring of data quality from the IVR to the OMS allowing action to be taken in case of duplicate or otherwise bad information.	System and process documentation for tested and deployed automated monitoring	10/15/20	3.2.2.8_PIP_OMS	Resubmit in January	Note, the 30-Day Report asked for this recommendation to be implemented by 10/15/2020. The plan should add a task to define and identify what are the various erroneous data forms which could occur in either normal or storm situations. It needs to also add a task to document various data correction options which the system could undertake and the plan should prioritize these options based on certain system configurations and/or runtime readings. The plan should also consider the impact of monitoring on the overall system performance and propose options should the impact of monitoring be detrimental to the system performance during storm situations. Also, please add step in project plan to develop written requirements for the project (RTM) and obtain LIPA signoff on requirements and proposed solution. The timeline for implementation of 7/21 is too long.
09/23/20	3.2.2.9	The IVR and OMS communication protocol should be reviewed in detail and redesigned so that all messages between the two components are agreed, understood, verified to be operational and tested against error conditions such as sending duplicate outage reports.	1	Duplicate outage reports are gracefully handled.	Tested and deployed updated IVR and OMS protocols. Configuration items in CMDB.	10/15/20	3.2.2.9_PIP_OMS	Resubmit in January	Note, the 30-Day Report asked for this recommendation to be implemented by 10/15/2020. The plan addresses the recommendation but it needs to also take into account changes to the system being made under recommendation 3.2.1.5. Also, add project plan step to develop written requirements (RTM) and obtain LIPA signoff on requirements and solution. The timeline for implementation of 7/21 is too long.
09/23/20	3.2.3.1	At the beginning of storm planning and throughout the storm, designate a system data administrator dedicated to monitor, on a continuous basis, the timeliness, accuracy, and integrity of the information coming from OMS to Kubra.	1	System data administrator(s) trained. Roles and responsibilities defined. Processes and procedures for monitoring and corrective or preventive actions developed, documented and tested, including for alternative data source and Outage Map adjustments per 3.2.3.2 and 3.2.3.3.	Kubra systems data administrator role, processes and procedures documentation, including training and designation plans.	10/15/20	3.2.3.1_PIP_Digital	PSEG Marked Complete; LIPA to Verify	PSEG Long Island states that the project is complete. LIPA will schedule IV&V Review. LIPA will review completion and report to Board on status in January.
09/23/20	3.2.3.2	If performance issues occur and cannot be promptly remediated, as part of contingency planning, institute the process of moving the lookup requests to an alternate data file to relieve congestion on the normal data transmission path.	1	Alternative data repository implemented and tested. Business processes and interfaces developed and tested to utilize the alternative data sink and source.	Processes and procedures for utilization of alternate data sources	10/15/20	3.2.3.2	PSEG Marked Complete; LIPA to Verify	PSEG Long Island states that the project is complete. LIPA will schedule IV&V Review. LIPA will review completion and report to Board on status in January.
09/23/20	3.2.3.3	Empower the administrator to take measures to adjust the Outage Map if the timeliness and accuracy of data begins to be faulty due to file processing delays or inaccurate restoration times coming from OMS. This person should also monitor data timeout potentials.	1	Business processes for outage map adjustments are developed and documented. Roles and responsibilities and training is developed.	Processes and procedures for monitoring and corrective or preventive actions.	10/15/20	3.2.3.3	PSEG Marked Complete; LIPA to Verify	PSEG Long Island states that the project is complete. LIPA will schedule IV&V Review. LIPA will review completion and report to Board on status in January.
09/23/20	3.2.3.7	Finish testing and implementing Null ETRS in OMS and move to regional ETRs for large storms.	1	Implementation of Null ETR (3.2.2.2) completed for Kubra Messaging, Outage Map, and Municipal Portal systems. Procedures implemented for use of regional ETRs in Outage map in large storms.	System and process documentation for tested and deployed Null ETR capability for Kubra Messaging, Outage Map, and Municipal Portal systems; procedures for use of regional ETRs in Outage Map.	10/15/20		PSEG Marked Complete; LIPA to Verify	PSEG Long Island states that the project is complete. LIPA will schedule IV&V Review. LIPA will review completion and report to Board on status in January.
09/23/20	3.2.4.2	Monitor system logs and health alerts to proactively detect incipient failures within the system or the infrastructure, especially during a storm.	1	Monitoring of website and mobile app system logs and health alerts to proactively detect incipient failures within the system or the infrastructure in place	Technical and process documentation for proactive website and mobile app monitoring	10/15/20	3.2.4.2	Resubmit in January	Incomplete document-missing sections.
09/23/20	3.2.4.3	Introduce the capability to quickly decouple the web and mobile apps from the OMS, so that when unresponsiveness is detected, alternate messaging can be provided to the customer and the OMS can be relieved of incoming transactional pressure.	1	Web and mobile apps are functional in the absence of OMS. Outage reports are directed to an alternative data sink which can be consumed by alternate and deferred pathways.	Design and process documentation for tested and deployed ability to decouple web and mobile apps from OMS.	10/15/20	2.2.4.3_PIP_Digital	Accept w/ Comment	Note, the 30-Day Report asked for this recommendation to be implemented by 10/15/2020. Add the following requirement to your scope: The data not sent to OMS will have to be resynced with OMS after transactional pressures are relieved.
09/23/20	3.2.5.1	Review ETR strategy and revise it to allow for suspending ETRs while damage is being assessed and relevant information to estimate an ETR is still being gathered.	1	Revised ETR Operational Strategy.	Revised ETR Operational Strategy documentation, deployment, incorporation of strategy in drills.	10/15/20		PSEG Marked Complete; LIPA to Verify	PSEG Long Island states that the project is complete. LIPA will schedule IV&V Review. LIPA will review completion and report to Board on status in January.
09/23/20	3.2.5.2	Prioritize completion of the 'null' ETR implementation effort. In the absence of deploying this functionality, if a major storm event occurs, the ETR coordinator and leadership should set a global ETR at the storm outset rather than employ a multiplier approach.	1	Revised ETR Operational Strategy.	Revised ETR Operational Strategy documentation, deployment, incorporation of strategy in drills.	10/15/20		PSEG Marked Complete; LIPA to Verify	PSEG Long Island states that the project is complete. LIPA will schedule IV&V Review. LIPA will review completion and report to Board on status in January.
	Section 5	Storm Resiliency							
09/23/20	5.4.2	Accelerating the deployment of smart meters and the full integration of smart meters with OMS so that outage reports will be available to OMS more rapidly and embedded outages (i.e., small-scale outages downstream of larger-scale outages) will be more readily identified, thus enhancing the efficiency of job dispatch. (PIP was split)	1	AMI/OMS integration complete and tested.	Revised Project Plans.	10/15/20	Project Implementation Plan for AMI Deployment 5.4.2_12.10.20	Accept w/ Comment	(AMI Deployment) Details on incremental installer resources not provided as asked for in review of v1.
						10/15/20	Project Implementation Plan for Integration and Operation of AMI with OMS 5.4.2_12.11.20	Resubmit in January	((AMI/OMS Integration) We do not see the justification for linking this project with OMS fixes and thereby delaying project execution. Please provide a detailed project schedule by subtasks and accelerate project completion based on removing the dependency of OMS 6.7 fixes. Please also describe the scope of implementation by requirements or features to be implemented.

Summary of PSEG Long Island Implementation Plans

LIPA is available to discuss any item that needs further clarification.

PSEG Long Island

Project Implementation Plan

for

Isaias Task Force Recommendation Implementations

Recommendation No. 4.17

Project Title: 4.17 Re-architect the inter-system message queuing applications for greater dynamic stability under highly demanding workloads

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1. Project Definition

PSEG Long Island provides multiple digital channels to customers and stakeholders for both routine and storm and outage related communications. Routine communications include account, billing, and energy usage information; Storm and outage communications include downed wire and outage reporting, customer status and estimated restoration times, overall system status and service restoration activities, and pre-storm notifications.

The project goal is to verify a solution is in place to protect the OMS system from becoming inundated with customer calls in the event of a large storm with high numbers of outage reports. This project focuses on including queueing protection for the ESB along with setting up an OMS reporting database for digital channels.

Any mention of the "Digital Channels" in this document refers to the channels below.

- Kubra Notifi
- PSEG LI Mobile App
- IVR
- HVCA (High Volume Call App)
- PSEG corporate website
- MyAccount Customer Portal
- Alexa/Google

1.1. Project Purpose, Objectives, and Success Criteria

1.1.1 Project Objectives:

The objectives of the project are:

1. Design and implement a solution that allows outage reports and requests from various digital channels to be queued up before being sent to OMS

1.1.2 Project End State and Success Criteria:

End State:

- The end state of the Digital Channels Enhancement project will be to verify queuing messages in the ESB are setup as asynchronous.

Success Criteria:

- Success is defined as an operable solution, thoroughly tested and deployed in a production environment

2. Project Deliverables:

The following are the list of deliverables that will be delivered as part of the implementation:

Deliverable	Delivery Date	Comments
To Be Proposed Architecture	01/6/2021	Create architecture for proposed plan.
Detailed Roadmap and Implementation plan	01/13/2021	Create a detailed roadmap and implementation plan.
Functional Design - ESB Queueing Layer	02/24/2021	Create a functional design – ESB Queueing Layer.
Functional Design - OMS Reporting DB/ New Webservice / Replication	03/24/2021	Create a functional design – OMS Reporting DB/New Webservice/Replication.
Technical Design - OMS Reporting DB/ New Webservice / Replication	04/21/2021	Create a technical design – OMS Reporting DB/New Webservice/Replication.
Technical Design - ESB Queueing layer	05/19/2021	Create a technical design – ESB Queueing layer.

The Project Management Office (PMO) will create and maintain the following across all IT Implementation Plans:

- Integrated Project Plan
- Status Reports
- Risks and Issues Log

2.1. Assumptions, Dependencies, and Constraints

2.1.1 Assumptions:

- PSEG LI has the necessary resources in place from an internal and third-party standpoint to complete all of the objectives including implementation work as needed
- The project team will move forward to implement recommendations and enhanced solutions for the existing PSEG LI framework and vendor partnerships
- Vendor resources will be available to provide SME time and answer any questions for respective applications
- All modifications to the webservice will happen on Sonic ESB first with a migration to MuleSoft ESB on a future date determined through design sessions
- PSEG LI will need to track changes made to the project plan for auditing purposes. This will allow for tracking impacts to schedule. Storms or other external factors will be accounted for (workarounds or extensions need to be included in the audit trail)

2.1.2 Dependencies:

- PSEG LI has a dependency on XTENSIBLE for performing changes on the Sonic ESB
- PSEG LI has a dependency on CGI in modifications made to the webservices on the OMS to provide outage status and report outages
- PSEG LI has a dependency on the OMS team to ensure the OMS is stood up and available for end to end testing activities requiring the digital channels
- The final implementation date for this solution has to coincide with the re-platform of OMS v6.7

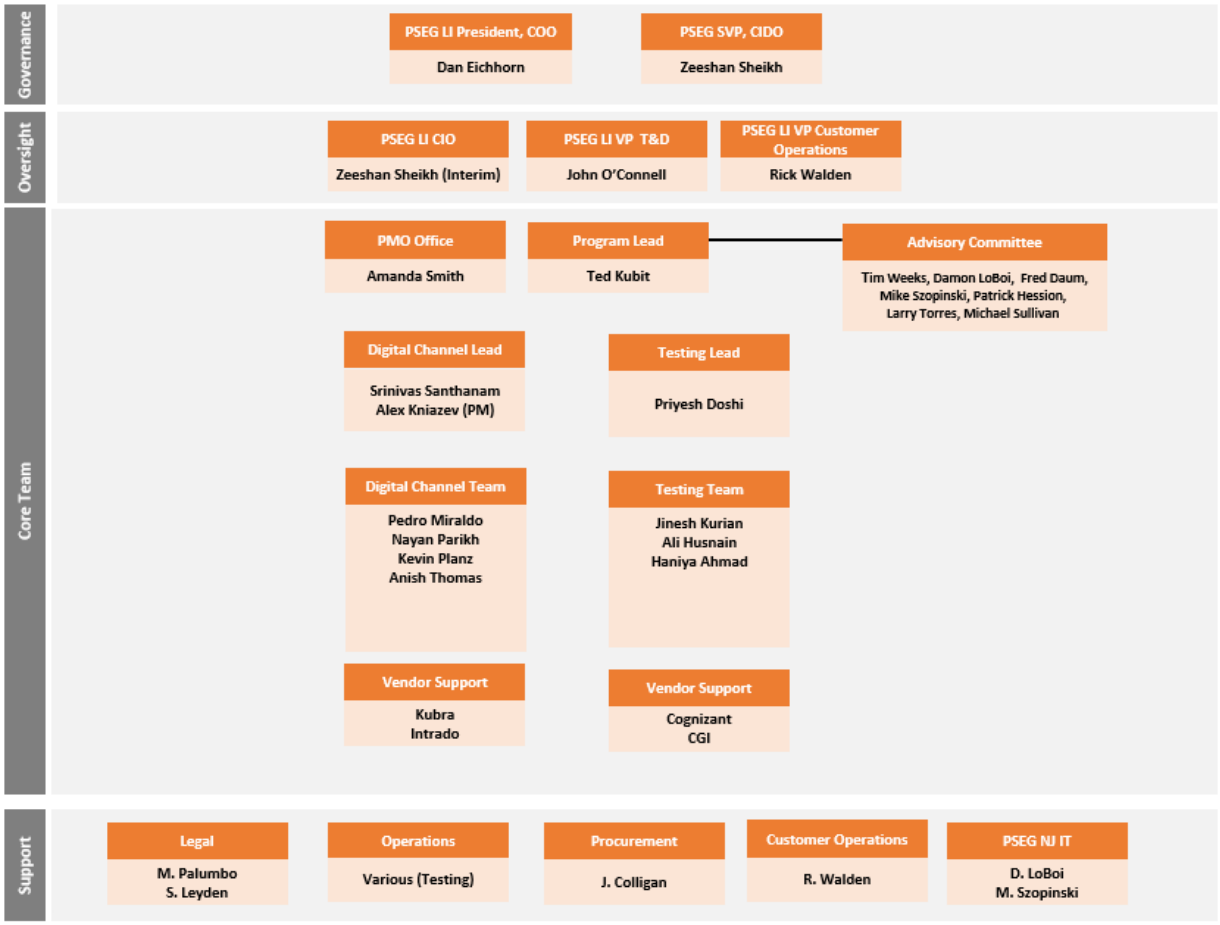
2.1.3 Constraints:

- Holiday schedules prevent the immediate ramp up for some of the activities in this plan
- Some resources will not be fully dedicated to Digital Channel Enhancement activities due to competing projects
- Storm season will be a priority for PSEG LI resources who will be unavailable when performing storm roles or resolving current production issues

3. Project Structure

3.1. Internal Project Organization

The Digital Channels Team, Testing Team along with vendor support from Kubra, Intrado, and Cognizant will implement the Digital Channels project. The chart below shows the internal project organization and the groups responsible for the Digital Channels project:



3.1.1 Roles and Responsibilities:

Roles and responsibilities for the Digital Channels Enhancement project are outlined in the table below:

Role	Name	Responsibilities
Steering Committee	Dan Eichhorn *(Chair)* Zeeshan Sheikh John O'Connell Rick Walden	• Championing the PSEG LI Storm Restoration initiative • Establishing guiding principles for the project • Ensuring project activities remained aligned with the guiding principles as defined • Providing guidance and input on key project decisions • Challenging the project team where appropriate • Approving major changes to the project's scope, objectives, timelines, costs, etc. • Acting as the decision maker for issues requiring escalation • Removing institutional barriers if and when they arise by serving as a project advocate
Leadership	PSEG LI CIO - Zeeshan Sheikh (Interim)	• Ensuring workstreams adhere to guiding principles as defined by project leadership • Managing issues and decision making • Removing obstacles that impede the success of the overall project Providing strategic guidance • Challenging the project team where appropriate • Approve procurement of external parties (as needed)
Advisory Committee Members	Tim Weeks Damon LoBoi Mike Szopinski Fred Daum Patrick Hession Larry Torres Michael Sullivan	• Providing guidance and input on key project decisions • Assisting in the procurement of external parties (as needed) • Removing obstacles that impede the success of the overall project • Providing subject matter expertise to the project • Challenging the project team where appropriate
Digital Channel Lead	Srinivas Santhanam / Alex Kniazev (ACN)	• Drive workstream tasks and deliver recommendations for Solution Design Specification • Provide support for Testing • Aid in the development functional requirements • Provide input on requirement / design • Coordinating Business Resources to support the project • Key Point of contact to for questions from the HVCA IVR vendor, Outage Map vendor and Xtensible Team • Providing sign off for deliverables that require business input/acceptance • Delivering the Digital Channels project on time and on budget
Project Manager	Kevin Planz	• Reporting overall status of the project to Stakeholders and Program Leadership • Identifying and escalating resource issues • Providing status reports for delivery to internal and external stakeholders (LIPA, DPS) • Manage resources, schedule, issues, risks and change requests • Process development, requirements definition, • Providing subject matter expertise to the project • User Impact Analysis • Facilitating workshops
Performance Engineer	Sri Kanaparthy	• Supporting Build/Test/Deploy Activities • Assist with Environment setup • Coordinating Development activities • Assist with Technical Design and Architecture • Assist with Transfer of Environments
Technical	Pedro Miraldo	• Supporting Build/Test/Deploy Activities

Architect		• Environment setup • Assist in the configuration of the Digital Channels • Coordinating Development activities • Technical Design • Testing Lead • Transfer of Environments
Business Lead	Nayan Parikh	• Process development, requirements definition, functional design • Technical Design • Supporting vendor questions and workshops Testing Execution
Test Lead	Sikder Islam	• Test Script Development • Test Script Execution for Assembly / Unit Test • Test Execution
Environment Lead	Anish Thomas	• Technical Design development • Environment design support
Test Project Manager	Priyesh Doshi	• Reporting overall testing status of the project to Stakeholders and Program Leadership • Identifying and escalating resource issues • Developing Testing Dashboard to accurately display current test execution • Manage resources, schedule, issues, risks and change requests • Providing testing subject matter expertise to the project • Defect Management

3.2. Other Stakeholders

Identification of other internal and external project stakeholders is shown below*:*

Organization/Team	Name	Responsibilities
Long Island Power Authority	Mujib Lodhi, Rick Shansky,	• Overall oversight of the entire project portfolio
Department of Public Service	Joseph Suich, Kevin Wisely	• Overall oversight of the entire project portfolio

4. Project Plan

4.1. Project Work Plan

LIPA ID	Type	Task Name	Current Status	% Complete	Target Start Date	Target Finish Date
4.17	**Recommendation**	**Re-architect the inter-system message queuing applications for greater dynamic stability under highly demanding workloads.**	**In progress**	**8%**	**Mon 11/9/20**	**Wed 6/30/21**
4.17	Subtask	Analyze architecture view for the inter system message queuing applications	Complete	100%	Fri 11/13/20	Mon 11/23/20
4.17	Subtask	Host Design Sessions to produce future state architecture for inter-system message queueing application	Complete	100%	Mon 11/9/20	Mon 11/23/20
4.17	Subtask	Review High Level To – Be architecture with project team for further refinement	Complete	100%	Mon 12/14/20	Fri 12/18/20
4.17	Subtask	Explore asynchronous messaging to ESB from digital channels	Not Started	0%	Mon 12/14/20	Wed 12/16/20
4.17	Subtask	Explore dynamic adjustment of time out settings across channels	Not Started	0%	Mon 12/14/20	Wed 12/16/20
4.17	Subtask	Final Review and Sign Off for proposed architecture	Not Started	0%	Mon 1/4/21	Wed 1/6/21
4.17	**Document**	To Be Proposed Architecture	Not Started	0%	Wed 1/6/21	Wed 1/6/21
4.17	Subtask	Create Detailed Roadmap and Implementation plan	Not Started	0%	Thu 1/7/21	Wed 1/13/21
4.17	**Document**	Detailed Roadmap and Implementation plan	Not Started	0%	Wed 1/13/21	Wed 1/13/21
4.17	Subtask	Data Security Review and approval of architecture	Not started	0%	Thu 1/7/21	Wed 1/13/21
4.17	Subtask	LIPA Design Review & Go / No Go	Not Started	0%	Thu 1/7/21	Wed 1/13/21
4.17	*Milestone*	*LIPA Solution Approval*	*Not Started*	*0%*	*Wed 1/13/21*	*Wed 1/13/21*
4.17	Subtask	LOE for URB approval (cost component, resource component)	Not Started	0%	Thu 1/14/21	Wed 1/20/21
4.17	*Milestone*	*URB Approval*	*Not Started*	*0%*	*Thu 1/28/21*	*Thu 1/28/21*
4.17	Subtask	Contract Procurement for resources	Not Started	0%	Thu 1/28/21	Wed 2/10/21
4.17	Subtask	Onboarding Resources	Not Started	0%	Thu 2/11/21	Wed 3/10/21

4.17	Subtask	Hardware Procurement	Not Started	0%	Thu 1/28/21	Wed 2/24/21
4.17	Subtask	Create Functional Design - ESB Queueing Layer	Not Started	0%	Thu 1/28/21	Wed 2/24/21
4.17	**Document**	Functional Design - ESB Queueing Layer	Not Started	0%	Wed 2/24/21	Wed 2/24/21
4.17	Subtask	Create Functional Design - OMS Reporting DB/ New Webservice / Replication	Not Started	0%	Thu 2/25/21	Wed 3/24/21
4.17	**Document**	Functional Design - OMS Reporting DB/ New Webservice / Replication	Not Started	0%	Wed 3/24/21	Wed 3/24/21
4.17	Subtask	Build / Development phase	Not Started	0%	Thu 3/25/21	Wed 5/19/21
4.17	Subtask	Create Technical Design - OMS Reporting DB/ New Webservice / Replication	Not Started	0%	Thu 3/25/21	Wed 4/21/21
4.17	**Document**	Technical Design - OMS Reporting DB/ New Webservice / Replication	Not Started	0%	Wed 4/21/21	Wed 4/21/21
4.17	Subtask	Create Technical Design - ESB Queueing layer	Not Started	0%	Thu 4/22/21	Wed 5/19/21
4.17	**Document**	Technical Design - ESB Queueing layer	Not Started	0%	Wed 5/19/21	Wed 5/19/21
4.17	*Milestone*	*Build Complete*	*Not Started*	*0%*	*Wed 5/19/21*	*Wed 5/19/21*
4.17	Subtask	LIPA Solution Review	Not Started	0%	Wed 5/19/21	Wed 5/19/21
4.17	Subtask	SIT / UAT Testing and defect resolution	Not Started	0%	Thu 5/20/21	Wed 6/30/21
4.17	Subtask	LIPA Testing sign off	Not Started	0%	Wed 6/30/21	Wed 6/30/21
4.17	*Milestone*	*SIT / UAT Testing sign off*	*Not Started*	*0%*	*Wed 6/30/21*	*Wed 6/30/21*
4.17	Subtask	Performance testing and defect resolution	Not Started	0%	Thu 5/20/21	Wed 6/9/21
4.17	Subtask	Penetration testing and data security review and approval of Build (Code)	Not Started	0%	Thu 5/20/21	Wed 6/9/21
4.17	Subtask	Go/No-Go	Not Started	0%	Thu 7/1/21	Thu 7/1/21
4.17	Subtask	Change Management	Not Started	0%	Thu 6/10/21	Wed 6/23/21
4.17	Subtask	Solution Deployment	Not Started	0%	Fri 7/2/21	Fri 7/2/21
4.17	*Milestone*	*Solution Deployed*	*Not Started*	*0%*	Fri 7/2/21	Fri 7/2/21

4.17	Subtask	Warranty Period	Not Started	0%	Mon 7/5/21	Fri 11/5/21

4.2. Risk Management Plan

The table below outlines the applicable risks and associated risk mitigations for the Digital Channels project.

Category	Project Risk	Mitigation
Resources	Resource constraints from Digital team due to competing projects.	Assign and commit business and IT resources and verify they are available to support this project. As necessary, hire contract resources to back fill normal job responsibilities
Resources	No holistic solution owner from PSEG LI to oversee entirety of solution	PSEG LI to designate a resource to be the holistic oversight for entire solution
Resources	Availability of resources due to other Storm duty priorities	Careful prioritization of projects with LIPA recommendations as top priority in order to complete all tasks/milestones on time.
Schedule / Cost	Contract negotiation could delay project due to multiple vendor partners involved for making changes to the entire architecture	PSEG LI to expedite contract approvals and determine if there are options for performing some work internally
Schedule / Cost	Vendor delays cause the schedule to shift and key project milestones are not able to be met on time	Work with the vendor to quickly resolve impediments.
Schedule / Cost	The activities outlined in the Digital Channels project become more complex than anticipated	Review the additional work required to complete the project with the steering committee. Add the scope required complete the project to the implementation plan. Clearly identify the steps that will be taken to anticipate this complexity in future projects.
Program Management	Lack of Scope/Requirements control including changes needed to legacy IT systems	Lack of scope/requirements control is the leading cause of budget and schedule overruns for this scale of project. It will be critical to closely define project scope/requirements, quickly clarify any uncertainties as they arise, and escalate as required. Any changes in scope/requirements must be agreed-to by the executive steering committee.
Program Management	Additional recommendations for improvement are developed and will need to be added to this workstream	Additional recommendations that have activities similar to those addressed in this project will be identified and logically grouped within tracks. Resource requirements will be identified. Where necessary, contract resources will be hired to back fill normal job responsibilities

4.3. Issue Resolution Plan

Issues and risks will be identified by the PSEG LI Team and the PMO daily. These items will be logged in an issue/risk tracker. The information in the tracker will be reviewed by the steering committee each week. The steering committee will determine the appropriate actions (if necessary) to get the project on track. The issue/risk tracker will be used to track items to closure, identifying the resolution date and course of action taken.

4.4. LIPA Reporting Plan

Weekly status reports for all recommendations, containing project progress and documentation will be provided to LIPA by Zeeshan Sheikh.

5. Technical Execution Plan

5.1. Technical Approach

5.1.1 Configuration of Applications:

For any changes to configuration of applications, vendors will be contacted when needed and internal infrastructure will be adjusted accordingly. Testing will be executed to verify changes are working as intended.

5.1.2 Changes to webservices:

Changes to existing webservices or new webservices will be developed on the preferred development platform at PSEG LI and code will be reviewed and unit tested prior to deploying code to the test environment. SAT and SIT testing will occur in the test environment to verify functionality is working as intended.

5.2. Quality Assurance Plan

The team will adhere to the PSEG's IT standards for the deployment of this project. PSEG LI IT SharePoint will be used as the document repository.

An individual test plan will be created, and for this recommendation it will include the following: Scope of testing, Test Criteria, Tests to be performed (e.g.: Functional, Acceptance, Regression, Performance Testing, End to end).

Test plan and test results will be signed off by PSEGLI CIO and President & COO of PSEGLI, and shared with LIPA upon completion

5.2.1 QA Methodology:

- The team will adhere to the PSEG's IT standards for the deployment of this project. PSEG LI IT SharePoint will be used as the document repository.
- The deliverables will follow the following QA processes:
    - Team lead review and signoff
    - Peer Review (PSEG)
    - Subject Matter Advisor Review as necessary
    - PSEG Signoff by PSEGLI CIO and President & COO of PSEGLI
    - Independent Verification and Validation by LIPA CIO
- An individual test plan will be created, and for this recommendation it will include the following: Scope of testing, Test Criteria, Tests to be performed (e.g.: Functional, Acceptance, Regression, Performance Testing, End to end).
- Test plan and test results will be signed off by PSEGLI CIO and President & COO of PSEGLI, and shared with LIPA upon completion

5.2.2 Test Scope:

Testing of incoming calls from a future storm will incorporate the following digital channels:

Channel	Test Plan (High Level)	Test Outcome
Kubra Notifi	Simulate incoming outage calls from this channel into OMS	Verify ESB is able to queue the incoming calls
PSEG LI Mobile App	Simulate incoming outage calls from this channel into OMS	Verify ESB is able to queue the incoming calls
IVR	Simulate incoming outage calls from this channel into OMS	Verify ESB is able to queue the incoming calls
HVCA	Simulate incoming outage calls from this channel into OMS	Verify ESB is able to queue the incoming calls
PSEG corporate website	Simulate incoming outage calls from this channel into OMS	Verify ESB is able to queue the incoming calls
MyAccount Customer Portal	Simulate incoming outage calls from this channel into OMS	Verify ESB is able to queue the incoming calls
Alexa/Google	Simulate incoming outage calls from this channel into OMS	Verify ESB is able to queue the incoming calls

ESB must be capable of handling large call volumes (to be defined in threshold documentation) and must be able to place those requests in a queue to be relayed to OMS. Testing must be done across multiple channels providing input at one time to verify real storm conditions are met and performance is not impacted with multiple reporting methods.

5.3. Documentation Plan

Throughout the project lifecycle the implementation team will document and deliver the key deliverables as listed above in Section 2. The due date of each deliverable will be based off the Project Schedule as outlined in Section 4.1. A final Project Closure Document will be delivered once all LIPA Recommendations in this implementation plan are completed.

Project Artifacts	Description
To Be Proposed Architecture	Create architecture for proposed plan.
Detailed Roadmap and Implementation plan	Create a detailed roadmap and implementation plan.
Functional Design - ESB Queueing Layer	Create functional design – ESB Queueing Layer.
Functional Design - OMS Reporting DB/ New Webservice / Replication	Create functional design – OMS Reporting DB/New Webservice/Replication.
Technical Design - OMS Reporting DB/ New Webservice / Replication	Create technical design – OMS Reporting DB/New Webservice/Replication.
Technical Design - ESB Queueing layer	Create technical design – ESB Queueing layer.

Revision History

Name	Date	Reason for Changes	Version
Ali Husnain	12/9/2020	Initial draft	1.1
Alexander Kniazev	12/9/2020	Updated test criteria and project scope	1.2
Alexander Kniazev/Ali Husnain	12/10/2020	Rewrite to address individual recommendation with updates to the project plan	1.3

PSEG Long Island
Project Implementation Plan

for

Isaias Task Force Recommendation Implementations

Project Title: Crisis Management Team Establishment Plan

Recommendation No.:

LIPA ID	Recommendation
5.05	Establish a Crisis Management Team made up of PSEG Long Island and LIPA executives to ensure focusing on Long Island operations and sufficient information flow to LIPA to conduct oversight

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1. Project Definition

The project will strengthen PSEG Long Island's Incident Command Structure. PSEG Long Island uses a form of an Incident Command Structure (ICS). Opportunities exist to strengthen the ICS structure and some roles within it. Most ICS structures rest beneath a broader Crisis Management System that has an "All Hazards" focus. For large-scale restorations, the CMS deals with political, government, financial and other roadblocks to relieve the ICS of high-level strategy development. This allows the ICS to have laser-like focus on situational awareness and decision making related to operations and customers. Given the unique governance, structure of the LIPA/PSEG Long Island relationship there should be a purpose-built Long Island CMT (LICMT). The project will establish a Crisis Management Team made up of PSEG Long Island and LIPA executives to ensure focus on Long Island operations and sufficient information flow to LIPA to conduct oversight.

1.1. Project Purpose, Objectives, and Success Criteria

Project Objectives:

The objective of the project is to establish a LICMT that will strengthen the existing Incident Command Structure, and assure optimization of crisis responses while assuring information flow to LIPA.

Project End State and Success Criteria*:*

- The end state of this project occurs when the Crisis Management Team is established and ready for activation
- Success criteria includes
    - Pre-crisis readiness of the team and effective activation and operation during any events
    - Effective management of any actual crisis
    - Drills included in ERP exercises

2. Project Deliverables:

Deliverable	Delivery Date	Comments
LICMT Charter	12/29/20	Charter written and approved
First meeting of LICMT	1/8/21	Kick off meeting
List of planned LICMT activities for 2021	1/8/21	Activity descriptions and time frames
Fully functional CMT	1/15/21	Ready for activation

2.1. Assumptions, Dependencies, and Constraints

Assumption:

We assume that LIPA and PSEG LI can promptly finalize charter document and make key members available to achieve the milestones in the project plan below – there is no reason to doubt this assumption.

Dependencies:

The design of the LICMT needs to consider roles and designs of other crisis/incident management structures. Specifically, LICMT design needs consideration alignment with PSEG CMT and PSEG LI Incident Command Structure. These alignments will be assured through the development of the LICMT charter.

Constraints:

Key leadership availability between 12/2/20 and 1/15/2021.

3. Project Structure

3.1. Internal Project Organization

Dan Eichhorn is the Executive Sponsor for this Project. John O'Connell, will sponsor the project from the PSEG LI organization. Additionally, PSEG will appoint a facilitator/crisis management subject matter expert. LIPA will name a project sponsor. Sponsors will coordinate to achieve milestones and goals.

PSEG LI vice presidents will be project team members and will contribute to formation of LICMT charter.

LIPA will name project team members who will contribute to the formation of the LICMT charter.

3.2. Other Stakeholders

PSEG Leadership
NJ CMT
Larry Torres – PSEG Long Island
LIPA
PSEG Long Island Customers

4. Project Plan

4.1. Project Work Plan

Deliverable	Delivery Date	Comments
Meeting to be held with LIPA and PSEG representatives to discuss objectives, scope, approach, risks and deliverables	12/10/20	In process
Name a LIPA project sponsor and LIPA project team members and other stakeholders	12/10/20	In process
Develop a draft charter and circulate for comment	12/10/20	In process
Develop a list of project risks	12/10/20	In process
Develop a risk mitigation plan	12/17/20	In process
Finalized charter	12/29/20	In process
First meeting of LICMT	1/08/21	In process
Fully functional CMT.	1/15/21	In process

4.2. Risk Management Plan

Project Risk	Mitigation
One possible risk is the need to efficiently coordinate LICMT "during crisis" activities with operational "during crisis" activities.	• Proper charter • Clear understanding of charter and roles and responsibilities can mitigate this risk.
Differences of opinions on roles and responsibilities	• Facilitated discussion • Open-mindedness
Project Team to identify additional risks	• Project team to develop

4.3. Issue Resolution Plan

Project team facilitator/SME will document action items and facilitate resolution, with support from project sponsors.

4.4. LIPA Reporting Plan

Project team will seek input form LIPA on their needs and will update LIPA Smartsheets as needed.

5. Technical Execution Plan

5.1. Technical Approach

There are no significant technical issues that require additional action beyond the project plan, above.

5.2. Quality Assurance Plan

Project facilitator / SME will seek sponsor and team member input on quality of deliverable.

Any concerns will be documented and tracked to sponsor satisfaction.

Key members from LIPA and PSEG Long Island will sign off on the approved charter as an acceptance of project quality and completion.

5.3. Documentation Plan

Document	Created By	Reviewed By	Target Date	Distribution
LICMT charter document	F. Savin	J. O'Connell and LIPA Sponsor	12/29/20	LICMT
List of planned LICMT activities for 2021	F. Savin	J. O'Connell and LIPA Sponsor	1/8/21	LICMT

Revision History

Name	Date	Reason for Changes	Version
John O'Connell	12/2/20	Initial Draft	1.0 draft 1

PSEG Long Island
Project Implementation Plan

for

Isaias Task Force Recommendation Implementations

Project Title: Emergency Assistance Agreement Plan

Recommendation No.:

LIPA ID	Recommendation
5.07	Expand the Emergency Assistance Agreement with National Grid to include Generation employees.

Table of Contents

1. Project Definition

National Grid employs generation employees on Long Island who had been available to support storm restoration under prior agreements with National Grid. While the line resources acquired to respond to the tropical storm Isaias were adequate during Isaias, there was an opportunity to better utilize other resources, such as National Grid Generation employees. Utilization of other resources can help with earlier restoration of impacted customers. This project seeks to establish an agreement with National Grid such that generation employees can support storm restoration.

1.1. Project Purpose, Objectives, and Success Criteria

Project Objectives:

Negotiate an Emergency Assistance Agreement with National Grid Generation employees and develop an activation policy for such employees. The goal of agreement is to allow these employees to support storm restoration and to specify appropriate requirements, conditions, and limitations. Areas for consideration include damage assessment, material handling, crew support, logistics etc.

Project End State and Success Criteria:

The project concludes when an agreement with National Grid in place and activation policy developed.

A successful agreement would be one that:

- Provides measurable impact through the utilization of National Grid generation resources.
- Includes flexibility and efficient use of National Grid employees.
- Clearly outlines requirements, conditions, and limitations.

2. Project Deliverables:

Deliverable	Delivery Date	Comments
Agreement with National Grid	2/15/21	Document reviewed by legal team and signed by all parties.
Activation policy	2/15/21	Documented policy regarding how and when National Grid resources would be acquired and utilized.

2.1. Assumptions, Dependencies, and Constraints

Assumptions:

We have an assumption that National Grid will make employees available. In prior discussions with National Grid, they were not interested in making these employees available.

Dependencies and Constraints:

This initiative is highly dependent on the needs and requirements and constraints held by National Grid.

3. Project Structure

3.1. Internal Project Organization

Executive Sponsor for this Project - Dan Eichhorn

Project Lead and Point of Contact with National Grid – John O'Connell

Activation policy drafter – Larry Torres

Legal point of contact – Andrea Elder-Howell

3.2. Other Stakeholders

National Grid

LIPA

4. Project Plan

4.1. Project Work Plan

Deliverable	Delivery Date	Comments
Meet with NG leadership, discus our objectives, identify opportunities	12/31/20	Deliver a meeting summary that outlines results of the discussion.
Meet with PSEGLI legal on timing strategy	12/31/20	Achieve a strategy to minimize time associated with legal reviews.
Internal review of feedback from NG	01/15/21	Pre-negotiation strategy document outlining PSEGLI approach and goals.
Develop schedule for negotiations and negotiate according to schedule	01/30/21	Series of calendar invitations between the negotiating members.
Develop Activation policy	02/08/21	Documented policy regarding how and when NG resources would be acquired and utilized.
Finalize Agreement	02/15/21	Document reviewed by legal team and signed by all parties.

4.2. Risk Management Plan

This initiative is highly dependent on the needs and requirements and constraints held by National Grid. Some risk and mitigations plans are identified as follows:

Project Risk	Mitigation
National Grid may not support this initiative	• Senior Executive involvement • Strong alignment of PSEGLI and LIPA leadership • Good communication across all parties • Creative efforts to address any National Grid concerns

Project Risk	Mitigation
Timeframe for appropriate legal reviews for both National Grid and PSEG LI	• Early engagement with legal teams

4.3. Issue Resolution Plan

Project lead will keep track of action items.

Progress will be reported to Jason Goldsmith, overall project manager.

4.4. LIPA Reporting Plan

PSEG Long Island would like to have monthly executive overview meetings with LIPA; the meeting would review completed tasks, missed dates, and decision points.

5. Technical Execution Plan

5.1. Technical Approach

There are no technical approaches required beyond the steps outlined in the above project plan.

5.2. Quality Assurance Plan

LIPA and PSEG LI Leadership will be apprised of status to assure quality

5.3. Documentation Plan

Document	Created By	Reviewed By	Target Date	Dist.
Support agreement with National Grid	PSEG	NG and PSEG Legal and LIPA	2/15/21	
Activation Policy	L. Torres	J. O'Connell and LIPA	2/15/21	
National Grid Gas Emergency Assistance Agreement dated 12/24/2013 attached below as appendix	LIPA & National Grid	NG and PSEG Legal and LIPA	Complete	

Revision History

Name	Date	Reason for Changes	Version
John O'Connell	12/2/20	Initial Draft	1.0 draft 1
Jason Goldsmith	12/10/20	2nd Draft	1.0 draft 2

Appendix

National Grid Gas Emergency Assistance Agreement (see attached)

National Grid Gas Emergency Assistance Agreement

(see attached)

EMERGENCY ASSISTANCE AGREEMENT

THIS EMERGENCY ASSISTANCE AGREEMENT (hereinafter the "Agreement") is entered into this 24th day of December 2013 by and between PSEG Long Island LLC (hereinafter "PSEG-LI"), a New York limited liability corporation, as agent of and acting on behalf of Long Island Lighting Company d/b/a LIPA ("LIPA" or "Requesting Party") with offices located at 80 Park Plaza, Newark, New Jersey 07102, and National Grid USA Service Company Inc., its subsidiaries, affiliates, successors and assigns (hereinafter referred to as "National Grid" or "Responding Party"), a Massachusetts corporation with offices located at 40 Sylvan Road, Waltham, Massachusetts. LIPA, and National Grid are hereinafter sometimes individually referred to as a "Party" or, collectively, as the "Parties". PSEG-LI is executing this Agreement on behalf of LIPA in its capacity as agent for LIPA, and PSEG-LI is not a principal party to this Agreement.

WHEREAS, PSEG-LI and LIPA have entered into an Operations Services Agreement ("OSA") and a Transition Services Agreement ("Initial TSA"), both entered into on December 28, 2011, in order for PSEG-LI to assume the operational maintenance of, and capital investment to the T&D System owned by LIPA. In addition, PSEG-LI and LIPA have negotiated, but not yet executed, an Amended and Restated Operations Services Agreement ("A&R OSA") in order to respond to and implement legislation (the "LIPA Reform Act") passed by the New York State Assembly and Senate on July 29, 2013; and

WHEREAS, LIPA has requested that National Grid make certain union and first line supervisor personnel of its affiliate company, KeySpan Gas East Company d/b/a National Grid ("Gas Co. Personnel") available for emergency assistance to aid LIPA and its agent PSEG-LI in maintaining or restoring electric utility service when such service is disrupted by acts of the elements or other occurrences where the Parties agree that emergency assistance is necessary or advisable; and

WHEREAS, it is acknowledged that National Grid is not under any obligation to furnish such emergency assistance; and

WHEREAS, National Grid is willing to furnish assistance in the form of Gas Co. Personnel and equipment when such personnel and equipment are available;

NOW THEREFORE, the Parties agree as follows:

1. EMERGENCY ASSISTANCE PERIOD. The emergency assistance period ("Emergency Assistance Period") shall commence when Gas Co. Personnel and or equipment expenses are initially incurred by the Responding Party in response to the Requesting Party's needs. This includes expenses incurred by the Responding Party in response to any request to prepare its Gas Co. Personnel and or equipment for transport to the Requesting Party's location but to await further instructions before departing. The Emergency Assistance period shall terminate when the Gas Co. Personnel and or equipment have returned to the Responding Party, and shall include any mandated DOT rest time resulting from the assistance provided and reasonable time required to prepare the equipment for normal activities, including but not limited to the cleaning off of trucks, and restocking of minor materials.

2. MUTUAL UNDERSTANDING. To the extent possible, the Parties will reach a mutual understanding and agreement in advance of the anticipated duration of the emergency assistance period. For extended assistance periods, the Parties will agree on a process for replacing or providing rest to the Responding Party's Gas Co. Personnel. It is understood and agreed that if in

National Grid's judgment such action becomes necessary, the decision to terminate the assistance and recall Gas Co. Personnel lies solely with National Grid. LIPA shall take the necessary action to return such Gas Co. Personnel and equipment promptly. National Grid is not under any obligation to furnish emergency assistance, National Grid will make Gas Co. Personnel available for LIPA and PSEG-LI major storm restoration for the following functions: damage assessment, and materials handling; provided, in National Grid's sole discretion, it determines:

(a) Such assistance does not jeopardize the health or safety of its Gas Co. Personnel providing emergency assistance;
(b) Such assistance does not interfere with National Grid's Long Island gas operations;
(c) Such assistance does not interfere with National Grid's emergency assistance efforts elsewhere by and among National Grid's other operating companies; and
(d) There are sufficient trained Gas Co. Personnel to support the particular emergency assistance function that is requested and further that the required training is current for the requested function.

The Parties acknowledge and agree that to the extent that certain roles require training, such training will be provided by Requesting Party at its expense prior to the deployment of Responding Party's Gas Co. Personnel in roles requiring training.

3. INDEPENDENT CONTRACTOR. Gas Co. Personnel shall at all times during the emergency assistance period continue to be employees of National Grid and shall not be deemed employees of Requesting Party for any purpose. National Grid shall be an independent contractor of Requesting Company and wages, hours and other terms and conditions of employment of National Grid shall remain applicable to its Gas Co. Personnel during the emergency assistance period.

4. NATIONAL GRID POINT OF CONTACT. National Grid shall identify a point of contact ("POC") in its organization for the coordination of responses to requests for emergency assistance. All requests for emergency assistance shall be made by Requesting Party to National Grid's POC. The National Grid POC will determine the resource mix that may be provided to the Requesting Company and manage the distribution of agreed assignments and roles.

5. COORDINATION OF SUPPORT FUNCTIONS. Unless otherwise agreed by the Parties, Requesting Party shall be responsible for supplying and coordinating support functions such as lodging, meals, materials, and related items.

6. SAFETY RULES. National Grid's safety rules shall apply to the work performed by its employees. Any questions or concerns arising with regard to safety rules and or procedures will be raised with the appropriate level of management of both Requesting and Responding Party for prompt resolution.

7. TIME SHEETS/WORK RECORDS. All time sheets and work records pertaining to National Grid's Gas Co. Personnel furnishing emergency assistance shall be kept by National Grid.

8. PERSONNEL & EQUIPMENT REQUEST. The Requesting Party shall indicate to the National Grid POC the type of equipment and the personnel and job functions requested. The foregoing

notwithstanding, the extent to which National Grid makes available such equipment and or Gas Co. Personnel shall be at National Grid's sole discretion.

9. REIMBURSEMENT. Requesting Party shall reimburse Responding Party for all costs and expenses incurred by Responding Party as a result of furnishing emergency assistance. Responding Party shall furnish documentation of expenses to Requesting Party. Such costs and expenses shall include, but not be limited to, the following:

   (a) Employees' wages and salaries for paid time spent during the Emergency Assistance Period, including time in Requesting Party's service area and paid time during travel to and from such service area, preparation, and rest time as set out in paragraph 1 above, plus Responding Party's standard payable additives to cover all employee benefits and allowances for vacation, sick leave and holiday pay and social and retirement benefits, all payroll taxes, workers' compensation, employer's liability insurance and other contingencies and benefits imposed by applicable law or regulation.
   (b) Employee travel and living expenses (meals, lodging and reasonable incidentals).
   (c) Repair or replacement cost of materials and supplies expended or furnished.
   (d) Repair or replacement cost of equipment damaged or lost.
   (e) Charges, at rates internally used by Responding Party, for the use of transportation equipment and other equipment requested.
   (f) Administrative and general costs, which are properly allocable to the emergency assistance to the extent that such costs are not chargeable pursuant to the foregoing subsections, including but not limited to any training costs.

10. PAYMENT. Requesting Party shall pay all costs and expenses of National Grid within thirty days of receiving an invoice therefor. If any undisputed invoice (or any portion thereof) is not paid by LIPA within thirty (30) days after the date of Requesting Party's receipt of the invoice, interest shall accrue on the unpaid amount as prescribed in accordance with section 2880 of the Public Authorities Law or in the event of a permitted assignment of this Agreement to a permitted assignee not subject to section 2880 of the Public Authorities Law, at the Default Interest Rate plus three percent (3%), calculated on the basis of a year of three hundred sixty (360) days and the actual number of days elapsed between the end of the thirty (30) day period and the actual payment date. "Default Interest Rate" shall mean the annual rate equal to the "Prime Rate" as reported on the thirtieth day after the date of the invoice in The Wall Street Journal (or, if such day is not a Business Day, the first Business Day immediately after such day). In the event that the Requesting Party fails to pay to National Grid any undisputed amounts set forth on any invoice (or portion thereof), within thirty (30) days after the date of such invoice, National Grid may, upon fifteen (15) days written notice to the Requesting Party, suspend its performance of Services under this Agreement.

11. INDEMNIFICATION. Requesting Party shall indemnify, hold harmless and defend National Grid its subsidiaries and affiliates ("Indemnified Responding Party") from and against any and all liability for loss, damage, cost or expense which Indemnified Responding Party may incur by reason of bodily injury, including death, to any person or persons or by reason of damage to or destruction of any property, including the loss of use thereof, which result from furnishing emergency assistance and whether or not due in whole or in part to any act, omission, or negligence of Indemnified Responding Party except to the extent that such death or injury to

person, or damage to property, is caused by the willful or wanton misconduct and/or gross negligence of Indemnified Responding Party. Where payments are made by Indemnified Responding Party under any workmen's compensation or disability benefits law or any similar law for bodily injury or death resulting from furnishing emergency assistance, Requesting Party shall reimburse Indemnified Responding Party for such payments, except to the extent that such bodily injury or death is caused by the willful or wanton misconduct and/or gross negligence of Indemnified Responding Party.

12. NOTIFICATION AND SETTLEMENT. In the event any claim or demand is made or suit or action is filed against Indemnified Responding Party alleging liability for which Requesting Party shall indemnify and hold harmless Indemnified Responding Party under paragraph 11 above, Indemnified Responding Party shall promptly notify Requesting Party thereof, and Requesting Party, at its sole cost and expense, shall settle, compromise or defend the same in such manner as it in its sole discretion deems necessary or prudent. Indemnified Responding Party shall cooperate with Requesting Party's reasonable efforts to investigate, defend and settle the claim or lawsuit.

13. RIGHT OF TERMINATION. National Grid, in its sole discretion, shall have the right to terminate the Agreement at any time upon 90 days prior written notice.

14. USE OF NAME AND MARK. Under no circumstances shall either Party, and each Party shall take reasonable actions to ensure that its officers, directors, trustees, employees, agents (and, with respect to such agents, its officers, directors, trustees, and employees), PSEG-LI and third persons authorized by a Party to speak on its behalf with respect to the emergency assistance services provided under this Agreement (the "Representatives") do not, (i) use or reference the other Party's trademarks or service marks in any publically disclosed or disseminated material without the prior written consent of the other Party (but a Party may use the corporate names or tradenames of the other Party in plain type font (i.e., without emphasis on the presentation of such name and not in a stylized, design or logo format)) or (ii) issue or permit to be issued, any press release, advertisement or literature of any kind referring to this Agreement or the emergency assistance services performed or received hereunder by a Party, except upon the prior written approval of the other Party. During the Term and for one (1) year thereafter, neither Party shall, and each Party shall take reasonable actions to ensure that its Representatives do not, make, publish or communicate to any third parties or in any public forum any comments or statements relating to the emergency assistance services provided under this Agreement (whether written or oral) that denigrate or disparage, or are detrimental to, the reputation or stature of the other Party or its affiliates or their respective businesses, or any of their respective employees, directors or officers; provided, however, that this prohibition does not preclude (x) comments or statements made in legal proceedings, investigations or governmental inquiries and (y) factual comments or statements relating to the emergency assistance services provided under this Agreement. Notwithstanding anything to the contrary in this section and notwithstanding that a Party has taken the reasonable actions with respect to its Representatives as contemplated by this this section, in the event a Representative engages in the actions that are contemplated that it should not take under this section, then the other Party shall be permitted to respond.

IN WITNESS WHEREOF, each Party hereto has caused this Agreement to be executed by its duly authorized representative, as of the first date written below.

PSEG Long Island LLC
as agent of and acting on behalf of the
Long Island Lighting Company d/b/a LIPA

By: _____
(Signature)

Name: John O'Connell
(Print Name)

Title: Vice President - Electric T+D

Date: 12/24/13

National Grid USA Service Company:

By: _____
(Signature)

Name: William J. Akley
(Print Name)

Title: SVP

Date: 12-23-13

PSEG Long Island
Project Implementation Plan
for
Isaias Task Force Recommendation Implementations
Project Title: ETR Manager Plan

The following Isaias Task Force recommendation is directly addressed as part of this plan:

LIPA ID	Report	Task Force recommendations directly addressed in this plan
5.15	90 Day Report	Create an ETR Manager position with staff to monitor OMS systems and ETR quality. The ETR Manager should report to the planning chief within the ICS.

Table of Contents

1. Project Definition

The Purpose of the Estimated Time to Restore ("ETR") Manager Plan is to address LIPA's Tier 1 recommendation to improve oversight and accountability of ETR reporting.

The recommendation is directly addressed and detailed in this plan and remediation efforts will begin immediately to the extent they are not already in process.

1.1. Project Purpose, Objectives, and Success Criteria

1.1.1 Project Objectives:

The Task Force identified several critical breakdowns in PSEG Long Island's operating model; many of which contributed to the issues experienced during Tropical Storm Isaias. The goal of this plan is to focus on the operating model gap related to ETR management identified during the post-storm review and build a comprehensive plan to create and define responsibilities for an ETR Manager position to immediately address the Task Force's concerns and operate more effectively in the future.

1.1.2 Project Scope:

PSEG Long Island experienced a breakdown of the ETR program after the storm caused in part by a lack of end-to-end oversight and accountability. The new ETR Manager will be responsible for a team that will focus on ETR and restoration strategy capabilities and tools in order to improve overall ETR quality, manage and monitor the ETR functionality within the OMS system, including focus on testing, training, and preparedness to use the ETR tools.

1.1.3 Project End State and Success Criteria:

The project's ultimate deliverable is an established role for, and a hired resource in, the ETR manager role. This resource will ultimately report directly to the newly established Emergency Preparedness Leader in response to LIPA's Tier 3 recommendation 7.06.[1]

2. Project Deliverables

The project's ultimate deliverable is a hired ETR Manager. The detailed work plan and status updates are listed in Section 4.1 Project Work Plan.

In an effort to improve ETR communications, PSEG LI has also revised the approval process for approving press releases and ETR notifications during a storm. See Appendix II: Storm Communications Approval Process and Appendix III: Communicating Projected Storm Impact.

[1] See Appendix I: PSEG Long Island Functional Organization

2.1. Assumptions, Dependencies, and Constraints

With any operating model changes, dependencies and ripple effects will conflict with other ongoing initiatives. PSEG Long Island will first address the changes at the executive leadership level and allow the future leadership team to oversee the remaining operating model changes and additional project improvement plans.

The primary constraint for this plan is the hiring cycle time. In the current business environment, recruiting, onboarding, and training employees takes time and should not be rushed. Nevertheless, the target date for completion of this aspect of the overall plan is by February 22, 2021. With this in mind, identifying these candidates will be a top priority for PSEG Long Island leadership.

3. Project Structure

3.1. Internal Project Organization

Dan Eichhorn will be the Executive Sponsor for this Project. John O'Connell will provide key executive level support and subject-matter expertise. Pat Hessian and Suzanne Brienza will provide project management support. Lola Holness will provide Human Resources support.

Role	Responsibilities
Project Sponsor Dan Eichhorn	• Ensure the hiring process adheres to guiding principles of the plan • Manage issues and decision making • Remove obstacles that impede the success of the overall project • Provide strategic guidance • Approve procurement of external parties (as needed) • Establish guiding principles for the project • Provide guidance and input on key project decisions • Monitor completion of activities • Challenge the project team where appropriate • Approve major changes to the project's scope, objectives, timelines, costs, etc. • Act as the decision maker for issues requiring escalation • Remove institutional barriers if and when they arise by serving as a project advocate
Key Executive Support John O'Connell	• Provide strategic direction and input on governance • Extend offer
Project Management Pat Hessian Suzanne Brienza	• Develop position descriptions • Conduct interviews • Participate in data integration
HR Support Lola Holness	• Provide HR guidance • Coordinate posting process • Lead data integration • Schedule interviews

3.2. Other Stakeholders

The other key stakeholders are:

- PSEG parent company
- LIPA
- LIPA Board of Trustees
- Customers

4. Project Plan

4.1. Project Work Plan

The following outlines the timeline for completion of the key milestones. Senior Leadership is committed to achieving these milestones in order to address the Task Force recommendations.

Important underlying components of these milestones will necessarily include the end-to-end processes of identifying and hiring the right talent and realigning current resources to achieve higher transparency and accountability. PSEG Long Island is also committed to continuous improvement in the form of developing appropriate training and corrective action programs required to sustain effective ETR management once these key milestones are met.

ETR Manager Plan Milestones

Task	Owner	Current Status	Target End Date
Create an ETR Manager position solely focused on managing ETRs and monitoring OMS system.	D. Eichhorn	In Progress	02/22/2021
Draft position description	P.Hession/S.Brienza	In Progress	12/21/2020
Share draft description with LIPA for review	D. Eichhorn	Pending	01/03/2021
Post position opening	B. Esposito	Pending	01/04/2021
Conduct interviews	P.Hession/S.Brienza	Pending	01/25/2021
Conduct data integration	L. Holness	Pending	02/01/2021
Prepare and extend offer	L. Holness	Pending	02/05/2021
Employee start date	L. Holness	Pending	02/22/2021

4.2. Risk Mitigation Plan

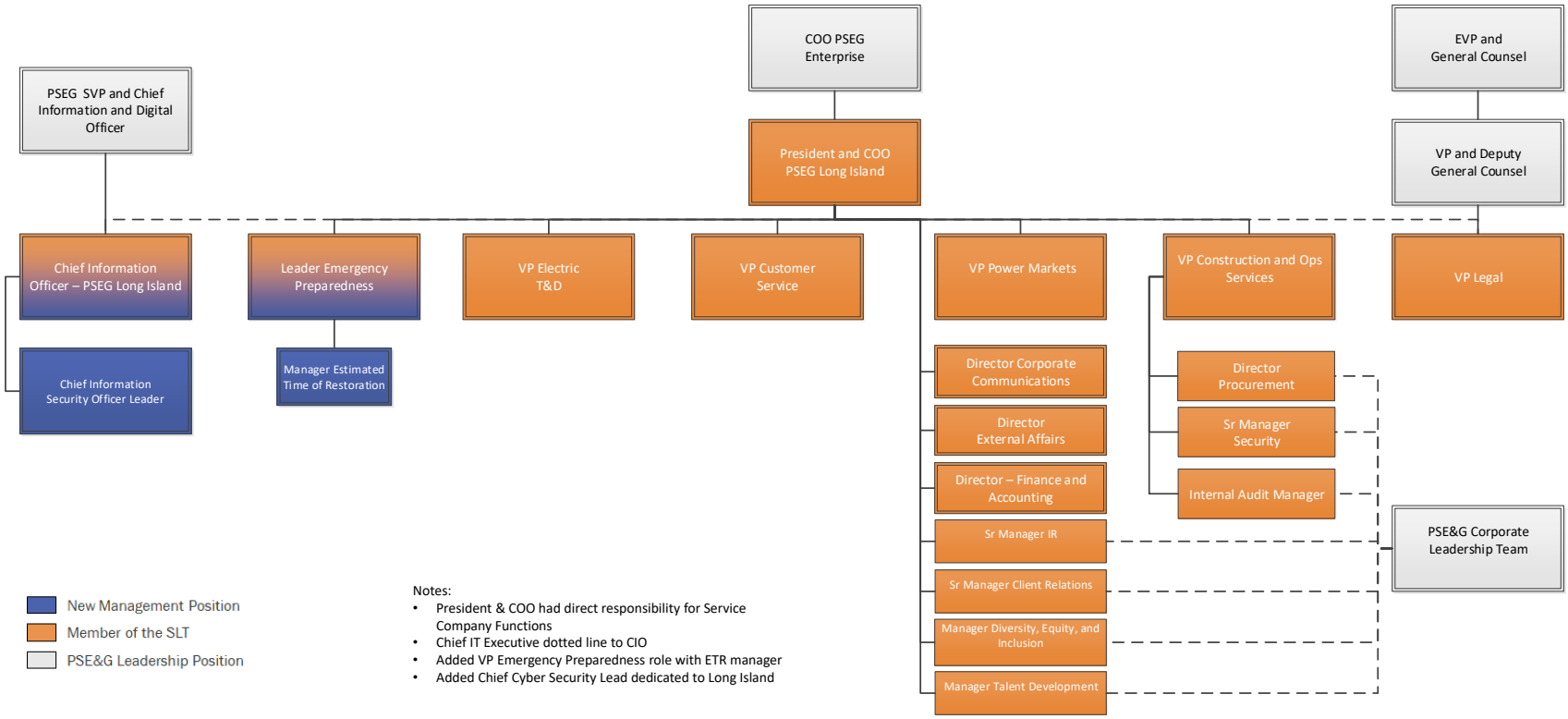
Category	Project Risk	Mitigation
Resources	Ability to hire qualified talent with appropriate industry experience	Work with external search agency for the ETR Manager position

Revision History

Name	Date	Reason for Changes	Version
D. Eichhorn	12/07/2020	initial draft	1.0 draft 1
M. Davis	12/10/2020	Updated to focus exclusively on ETR Manager plan	2.0 draft 1

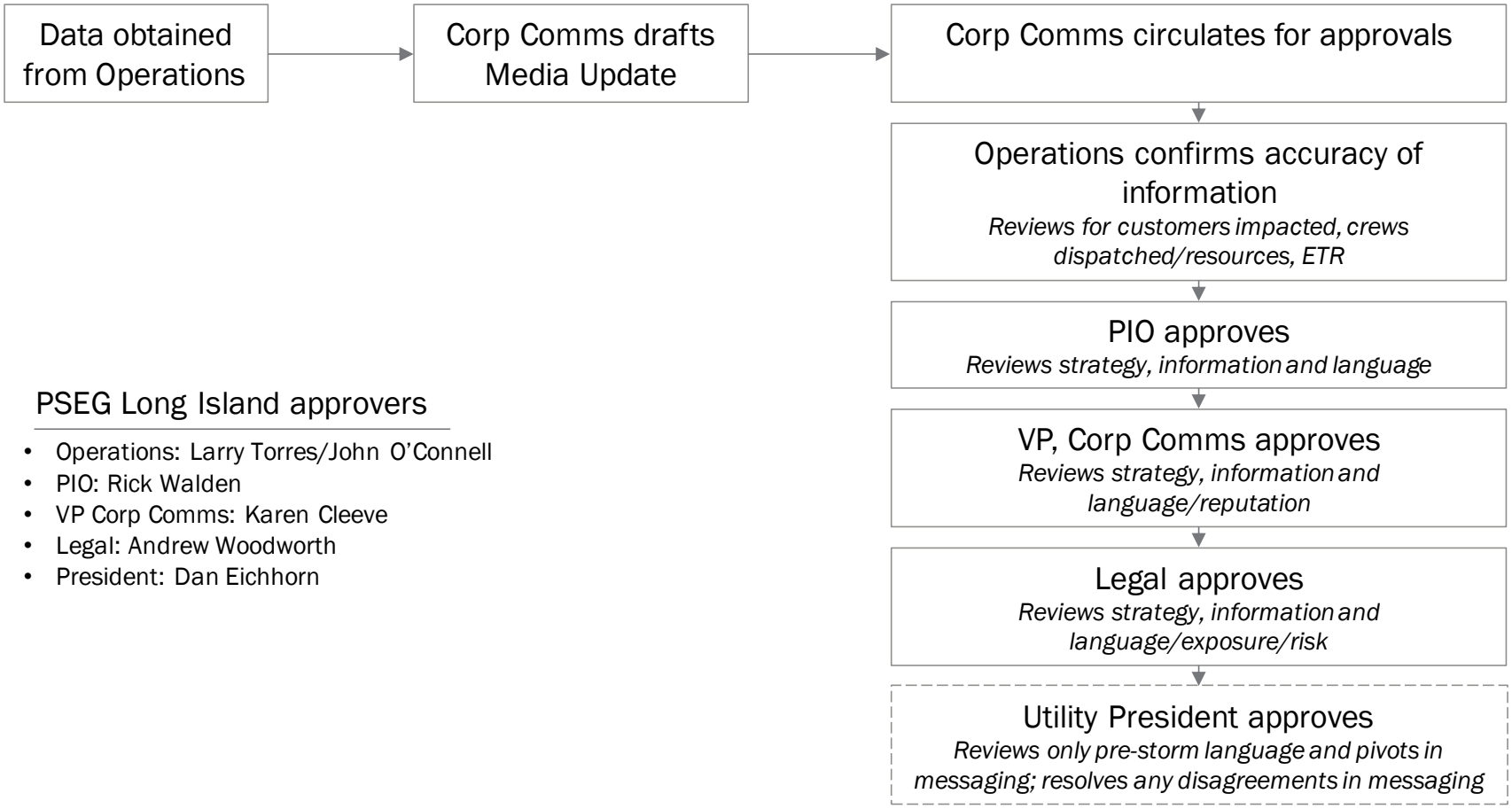
M. Davis	12/10/2020	Minor updates throughout	2.0 draft 2

Appendix I: PSEG Long Island Functional Organization



Appendix II: Storm Communications Approval Process

PSEG Long Island revisited the Corporate Communications materials review and approval process, outlined below, in order to incorporate lessons learned from Tropical Storm Isaias.

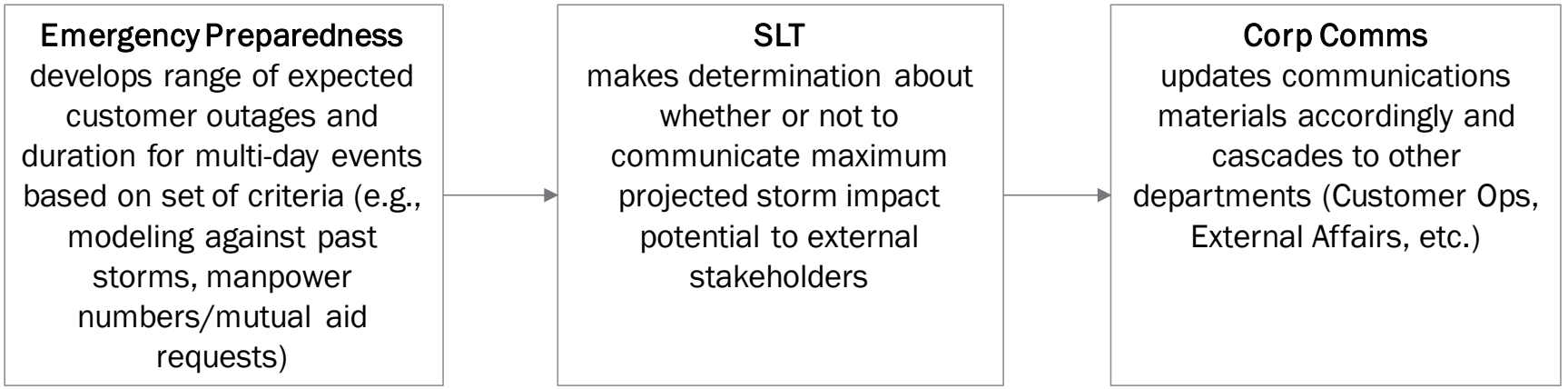


Appendix III: Communicating Projected Storm Impact

PSEG Long Island updated its Storm Communications Library with pre-written pre-storm maximum projected impact messaging in order to appropriately set customer expectations for major, multi-day events.

PSEG Long Island will communicate anticipated storm impact (e.g., outage duration), when appropriate, in pre-storm preparatory communications and across corporate communications channels.

Process



PSEG Long Island

Project Implementation Plan

for

Isaias Task Force Recommendation Implementations

Recommendation No. 3.2.1.2

Project Title: 3.2.1.2 Improve the pre-storm planning process and include specific communication, coordination, and escalation with the communication service carriers and the HVCA provider before and during the storm.

Table of Contents

1. Project Definition

This project includes efforts intended to improve the pre-storm planning process and include specific communication, coordination, and escalation with the communication service carriers and the HVCA provider before and during the storm.

1.1. Project Purpose, Objectives, and Success Criteria

Project Objectives:

The objective of this project is to review existing pre-storm planning processes, including communications, coordination with vendors (e.g. carriers, HVCA) and escalation matrices and identify gaps. Particular focus will be placed around specific areas that were deficient during the response to Tropical Storm Isaias.

Project End State and Success Criteria:

The Emergency Response Process (ERP) document will be updated and enhanced to address any gaps that were identified. This should include updated communications and communications timings when storms are forecasted as well as updated action plans that include advance vendor engagement. The updated ERP will be approved by PSEG LI leadership and distributed to all key stakeholders for execution.

2. Project Deliverables:

Deliverable	Delivery Date	Comments
Updated Emergency Response Process (ERP)	12/18/2020	The ERP will be reviewed and amended as necessary. A pre-storm checklist, closely tied to the ERP, will be updated to include the process for communicating with service carriers and the HVCA provider before and during a storm
Written Vendor Agreements	12/18/2020	PSEG LI will contract a dedicated specialist from Verizon

The Project Management Office (PMO) will create and maintain the following across all IT Implementation Plans:

- Integrated Project Plan
- Status Reports
- Risks and Issues Log

2.1. Assumptions, Dependencies, and Constraints

2.1.1 Assumptions:

- Project team will be available for design discussions and will have a designated resource who will confirm all decisions made for future improvements
- Vendor resources will be available to provide SME time and answer any questions on infrastructure and associated applications
- Procurement timelines will be expedited to meet project schedule

2.1.2 Dependencies:

- PSEG LI has a dependency on Verizon to make any changes to the voice network prior to initial ingress, including Verizon Business Network IVR, backbone capacity and external call routing
- PSEG LI has a dependency on Intrado for providing sufficient capacity to handle surging call volumes over shared infrastructure

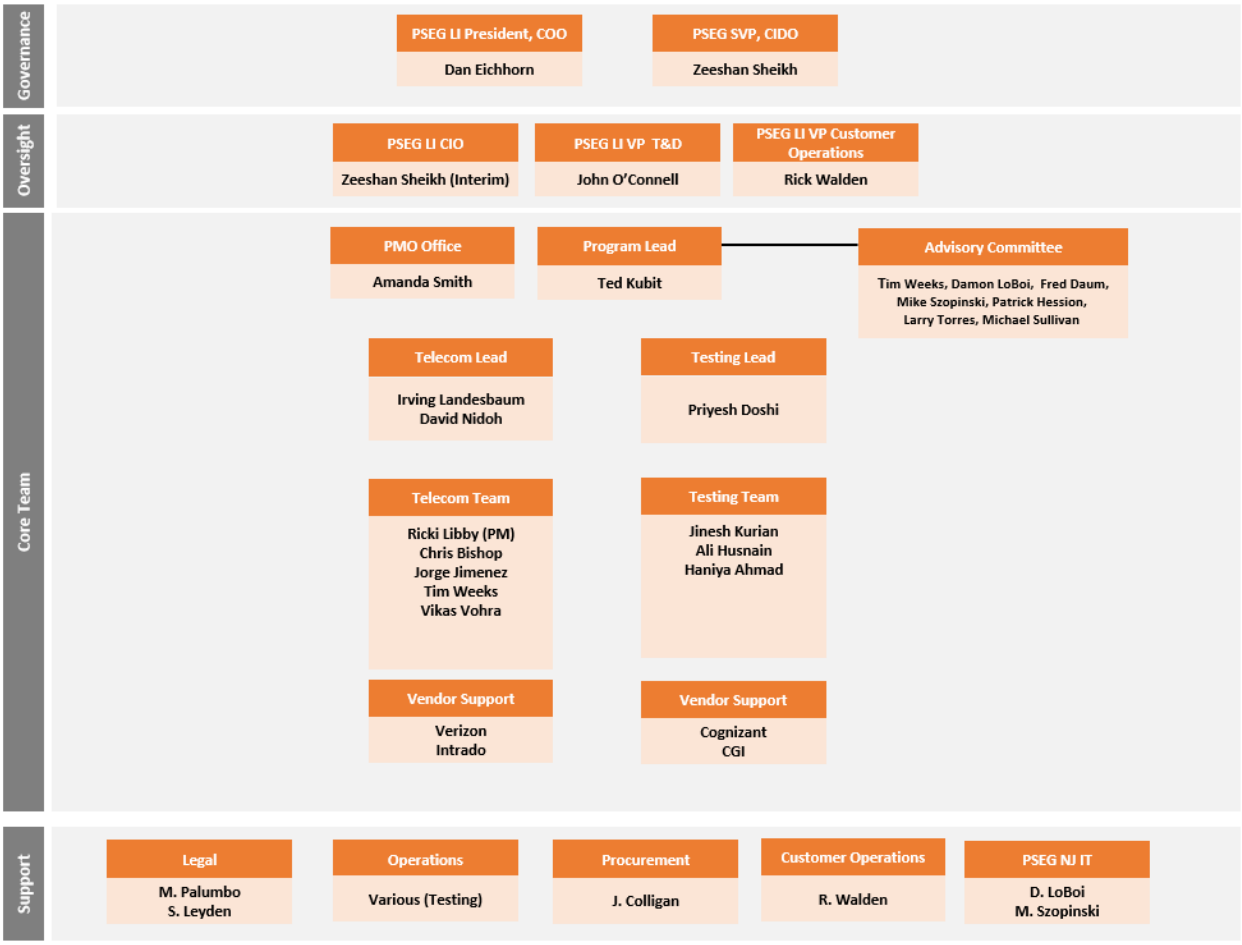
2.1.3 Constraints:

- The number of qualified resources with subject matter expertise.
- Competing projects and operational activities that further constrain available resources.
- Availability of vendor resources to provide application updates and support testing activities.

3. Project Structure

3.1. Internal Project Organization

The Telecom Team, Testing Team along with vendor support from Intrado and Verizon will implement the Telecom project. The chart below shows the internal project organization and the groups responsible for the Telecom project:



3.1.1 Roles and Responsibilities:

Roles and responsibilities for the Telecom project are outlined in the table below:

Role	Name	Responsibilities
Steering Committee	Dan Eichhorn *(Chair)* Zeeshan Sheikh John O'Connell Rick Walden	• Championing the PSEG LI Storm Restoration initiative • Establishing guiding principles for the project • Ensuring project activities remained aligned with the guiding principles as *defined* • Providing guidance and input on *key project decisions* • Challenging the project team where appropriate • Approving major *changes to the project's scope, objectives, timelines, costs, etc.* • Acting as the decision maker for issues requiring *escalation* • Removing institutional barriers when *they arise by serving as a project advocate*
PSEG LI CIO	Zeeshan Sheikh (Interim)	• Ensuring *workstreams adhere to guiding principles as defined by project leadership* • Managing issues and decision making • Removing *obstacles that impede the success of the overall project Providing strategic guidance* • Challenging the project team where appropriate • Approve procurement of external parties (as needed)

Role	Name	Responsibilities
Advisory Committee Members	Tim Weeks Damon LoBoi Mike Szopinski Fred Daum Patrick Hession Larry Torres Michael Sullivan	• Providing guidance and input o*n key project decisions* • Assisting in the procurement of external parties (as needed) • Removing obstacles that impede the success of the overall project • Providing subject matter expertise to the project • Challenging the pr*oject team*
Team Lead	Irving Landesbaum *David Nidoh*	• Drive workstream tasks and deliver recommendations for Solution Design Specification • Provide support for Testing • Aid in the developmen*t functional requirements* • Provide input on requirement / design • Coo*rdinating Business Resources to support the project* • Key Point of contact to for questions from the vendor • Providing sign off for deliverables that require business *input/acceptance* • Delivering the project on time and on budget
Project Manager	*Ricki Libby*	• Reporting overall status of the project to Stakeholders and Program Leadership • Identifying and escalating resource issues • Providing status reports for delivery to internal and external stakeholders (LIPA, DPS) • Manage resources*, schedule, issues, risks and change requests* • Process development, requirements definition, • Providing subject matter expertise to th*e project* • User Impact Analysis • Facilitating workshops
Performance Engineer	Sri Kanaparthy	• Supporting Build/Test/Deploy Activities • Assist with Environment setup • Coordinating Development activities • Assist with Technical Design and Architecture • Assist with Transfer of Environments
Test Lead	Sikder Islam	• Test Script Development • Test Script Execution for Assembly / Unit Test • Test Execution

3.2. Other Stakeholders

Identification of other internal and external project stakeholders is shown below*:*

Organization/Team	Name	Responsibilities
Long Island Power Authority	Mujib Lodhi, Rick Shansky	• Overall oversight of the entire project portfolio
Department of Public Service	Joseph Suich, Kevin Wisely	• Overall oversight of the entire project portfolio

4. Project Plan

4.1. Project Work Plan

More tactically, in order to achieve the objectives outlined in Section 2 of this document, PSEG LI has developed a strategic Project Plan segmented by workstream and comprised of the following activities:

LIPA ID	Task	Recommendation	Current Status	Pct Complete	Target Start Date	Target End Date
3.2.1.2	**Primary**	**Improve the pre-storm planning process and include specific communication, coordination, and escalation with the communication service carriers and the HVCA provider before and during the storm.**	**In Progress**	**50%**	**11/17/2020**	**12/22/2020**
3.2.1.2	Sub Task	Meet with Intrado on process updates for storm planning and communications/escalations	Complete	100%	11/17/2020	11/17/2020
3.2.1.2	Sub Task	Meet with Verizon on process updates for storm planning and communications/escalations	Complete	100%	12/8/2020	12/8/2020
3.2.1.2	Sub Task	Review proposed updates to planning and communications with Verizon and Intrado	Not Started	50%	12/8/2020	12/16/2020
3.2.1.2	Document	Document proposed updates in Emergency Response Plan (ERP)	Not Started	0%	12/17/2020	12/18/2020
3.2.1.2	Sub Task	Management Review and Approval of Task	Not Started	0%	12/21/2020	12/22/2020
3.2.1.2	Milestone	LIPA Task #3.2.1.2 Complete	Not Started	0%	12/22/2020	12/22/2020

4.2. Risk Management Plan

The table below outlines the applicable risks and associated risk mitigations for the Telecom project.

Category	Project Risk	Mitigation
Resources	Availability of resources due to other Storm duty priorities	Careful prioritization of projects with LIPA recommendations as top priority in order to complete all tasks/milestones on time.
Schedule / Cost	Contract negotiation could delay project due to multiple vendor partners involved for making changes to the entire architecture	PSEG LI to expedite contract approvals and determine if there are options for performing some work internally
Schedule / Cost	Vendor delays cause the schedule to shift and key project milestones are not able to be met on time	Work with the vendor to quickly resolve impediments.
Program Management	Lack of Scope/Requirements control including changes needed to legacy IT systems	Lack of scope/requirements control is the leading cause of budget and schedule overruns for this scale of project. It will be critical to closely define project scope/requirements, quickly clarify any uncertainties as they arise, and escalate as required. Any changes in scope/requirements must be agreed-to by the executive steering committee.
Infrastructure	Lack of carrier diversity at the TFN / Telco level	Document risk for review by LIPA. Potential opportunity to add diversity through CCaaS implementation.

4.3. Issue Resolution Plan

Issues and risks will be identified by the PSEG LI Team and the PMO daily. These items will be logged in an issue/risk tracker. The information in the tracker will be reviewed by the steering committee each week. The steering committee will determine the appropriate actions (if necessary) to get the project on track. The issue/risk tracker will be used to track items to closure, identifying the resolution date and course of action taken.

4.4. LIPA Reporting Plan

Weekly status reports for all recommendations, containing project progress and documentation will be provided to LIPA by Zeeshan Sheikh.

5. Technical Execution Plan

5.1. Technical Approach

5.1.1 Technical Improvements:

Many of the recommended changes to Telecom architecture involve changes to be implemented to the PSEG LI and/or Intrado Voice Network by the respective organization. Close coordination of these activities will be essential to ensuring successful implementation with limited to no impact on existing operations.

Furthermore, additional architecture changes have been added as a result of testing initial changes and identifying new bottlenecks. This demonstrates that thorough testing of all changes, not just for functional success, but also for the expected performance improvements will be essential to verify that bottlenecks have been identified and, where possible, remediated.

5.1.2 Process Improvements:

In addition to the many technical improvements to the telecom and carrier infrastructures that will be made, a series of process enhancements will also be implemented. This will include improved vendor coordination before, during and after storms and other impactful events. Internal process improvements will also be made to include enhanced communications with key stakeholders, updated escalation matrices and processes and quality assurance reviews. All changes will be clearly documented and approved and distributed for execution during the next service impacting event.

5.2. Quality Assurance Plan

1 The team will adhere to the PSEG's IT standards for the deployment of this project. PSEG LI IT SharePoint will be used as the document repository.
2 The deliverables will follow the following QA processes:
   a. Team lead review and signoff
   b. Peer Review (PSEG)
   c. Subject Matter Advisor Review as necessary

d. PSEG Signoff by PSEGLI CIO and President & COO of PSEGLI
e. Independent Verification and Validation by LIPA CIO

5.3. Documentation Plan

Throughout the project lifecycle the implementation team will document and deliver the key deliverables as listed above in Section 2. The due date of each deliverable will be based off the Project Schedule as outlined in Section 4.1. A final Project Closure Document will be delivered once all LIPA Recommendations in this implementation plan are completed.

Revision History

Name	Date	Reason for Changes	Version
David Nidoh	12/11/2020	initial draft	1.0 draft 1

PSEG Long Island

Project Implementation Plan

for

Isaias Task Force Recommendation Implementations

Recommendation No. 3.2.1.6

Project Title: 3.2.1.6 PSEG Long Island should review the service operation process between PSEG Long Island and Verizon to understand how the major issues as identified are handled.

Table of Contents

1. Project Definition

This project includes efforts intended to improve the planning process and handling of major issues as they arise between Verizon and PSEG LI. This will include updated communications plans before, during and after service impacting events, an improved escalation matrix and methodologies for ensuring issue resolutions impacting PSEG LI are handled with the urgency expected for a utility client.

1.1. Project Purpose, Objectives, and Success Criteria

Project Objectives:

The project objectives are to create a documented process for periodic reviews of services delivered by Verizon. The periodic reviews will to be for the purpose of reviewing recent operations performance and metrics against contractual SLAs, provide a forum for issues resolution, keeping contact information current, reviewing day-to-day and storm operating procedures and to identify opportunities for improvement. The documented process will include frequency, attendees, roles and intended outcomes.

Project End State and Success Criteria*:*

Process for periodic review of service operation between PSEG Long Island and Verizon established. Roles and responsibilities assigned.

2. Project Deliverables:

Deliverable	Delivery Date	Comments
Updated Operational Procedures Document	12/16/2020	

The Project Management Office (PMO) will create and maintain the following across all IT Implementation Plans:

- Integrated Project Plan
- Status Reports
- Risks and Issues Log

2.1. Assumptions, Dependencies, and Constraints

2.1.1 Assumptions:

- Project team will be available for design discussions and will have a designated resource who will confirm all decisions made for future improvements
- Verizon resources will be available to provide SME time and answer any questions on proposed future state processes and be in a position to make commitments on behalf of Verizon.

2.1.2 Dependencies:

- PSEG LI has a dependency on Verizon to commit to supporting this recommended process improvement.

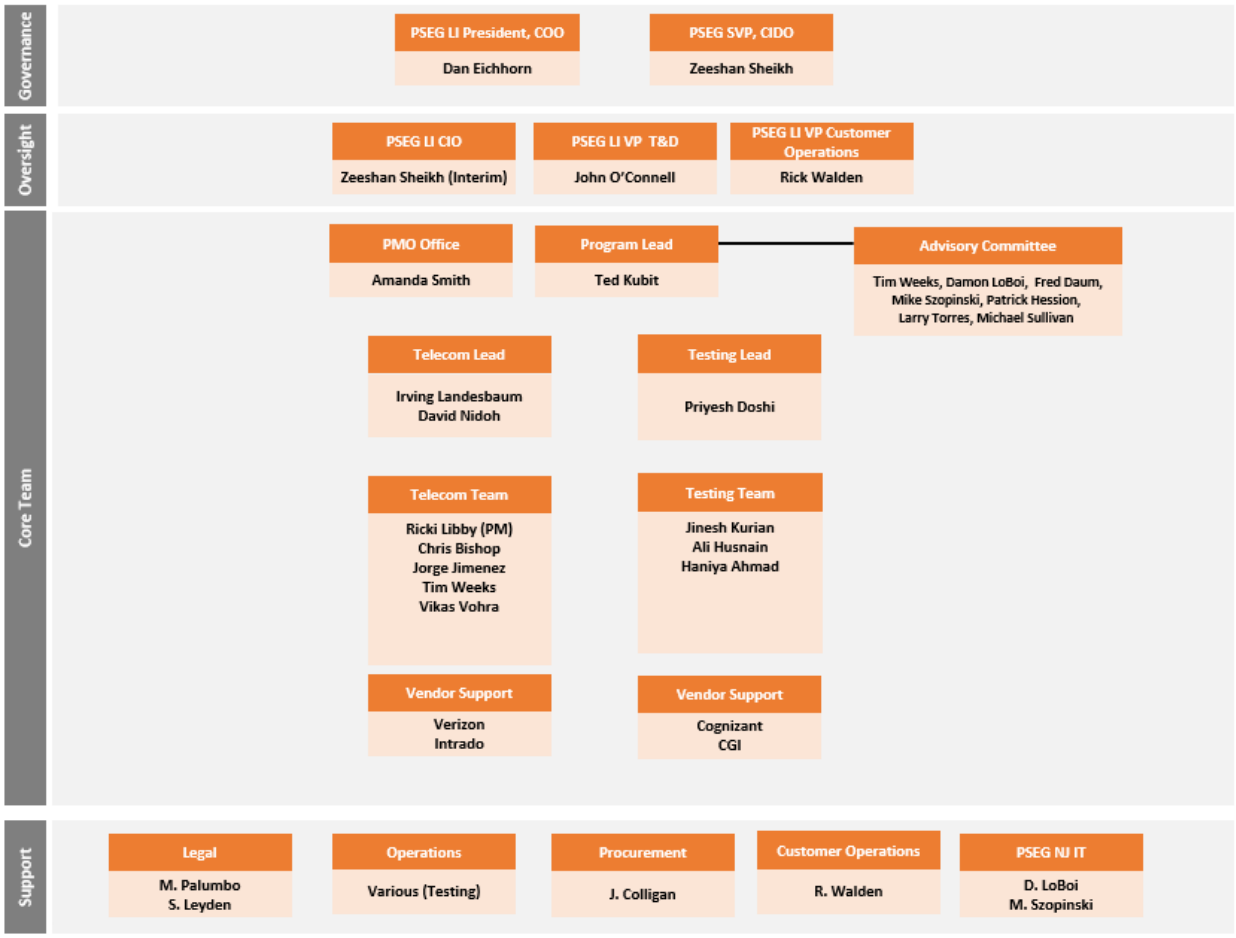
2.1.3 Constraints:

- Competing projects, addressing priority recommendations and operational activities that further constrain available resources to complete the document however most of the discussions with Verizon and complete.
- Availability of vendor resources to provide any additional support in a timely manner, as required

3. Project Structure

3.1. Internal Project Organization

The Telecom Team along with vendor support from Verizon will implement this Telecom project. The chart below shows the internal project organization and the groups responsible for the Telecom project:



3.1.1 Roles and Responsibilities:

Roles and responsibilities for the Telecom project are outlined in the table below:

Role	Name	Responsibilities
Steering Committee	Dan Eichhorn *(Chair)* Zeeshan Sheikh John O'Connell Rick Walden	• Championing the PSEG LI Storm Restoration initiative • Establishing guiding principles for the project • Ensuring project activities remained aligned with the guiding principles as defined • Providing guidance and input on key project decisions • Challenging the project team where appropriate • Approving major changes to the project's scope, objectives, timelines, costs, etc. • Acting as the decision maker for issues requiring escalation • Removing institutional barriers when they arise by serving as a project advocate
PSEG LI CIO	Zeeshan Sheikh (Interim)	• Ensuring workstreams adhere to guiding principles as defined by project leadership • Managing issues and decision making • Removing obstacles that impede the success of the overall project Providing strategic guidance • Challenging the project team where appropriate • Approve procurement of external parties (as needed)
Advisory Committee Members	Tim Weeks Damon LoBoi Mike Szopinski Fred Daum Patrick Hession Larry Torres Michael Sullivan	• Providing guidance and input on key project decisions • Assisting in the procurement of external parties (as needed) • Removing obstacles that impede the success of the overall project • Providing subject matter expertise to the project • Challenging the project team
Team Lead	Irving Landesbaum *David Nidoh*	• Drive workstream tasks and deliver recommendations for Solution Design Specification • Provide support for Testing • Aid in the development functional requirements • Provide input on requirement / design • Coordinating Business Resources to support the project • Key Point of contact to for questions from the vendor • Providing sign off for deliverables that require business input/acceptance • Delivering the project on time and on budget
Project Manager	*Ricki Libby*	• Reporting overall status of the project to Stakeholders and Program Leadership • Identifying and escalating resource issues • Providing status reports for delivery to internal and external stakeholders (LIPA, DPS) • Manage resources, schedule, issues, risks and change requests • Process development, requirements definition, • Providing subject matter expertise to the project • User Impact Analysis • Facilitating workshops
Performance Engineer	Sri Kanaparthy	• Supporting Build/Test/Deploy Activities • Assist with Environment setup • Coordinating Development activities • Assist with Technical Design and Architecture • Assist with Transfer of Environments
Test Lead	Sikder Islam	• Test Script Development • Test Script Execution for Assembly / Unit Test • Test Execution

3.2. Other Stakeholders

Identification of other internal and external project stakeholders is shown below*:*

Organization/Team	Name	Responsibilities
Long Island Power Authority	Mujib Lodhi, Rick Shansky	• Overall oversight of the entire project portfolio
Department of Public Service	Joseph Suich, Kevin Wisely	• Overall oversight of the entire project portfolio

4. Project Plan

4.1. Project Work Plan

More tactically, in order to achieve the objectives outlined in Section 2 of this document, PSEG LI has developed a strategic Project Plan segmented by workstream and comprised of the following activities:

Task	Recommendation	Pct Complete	Target Start Date	Target End Date
Recommendation	**PSEG Long Island should review the service operation process between PSEG Long Island and Verizon to understand how the major issues as identified are handled.**	**75%**	**9/10/2020**	**12/16/2020**
Task	Review and confirm relevant SLAs	100%	9/10/2020	12/10/2020
Task	Meet with Verizon on process updates for incident response planning and communications/escalations	100%	12/10/2020	12/10/2020
Task	Documented process for periodic review of service operation between PSEG Long Island and Verizon	0%	12/11/2020	12/14/2020
Task	Management Review and Approval of Task	0%	12/15/2020	12/16/2020
Document	Operational / Standard Operating Procedure Document	0%	12/15/2020	12/16/2020
Milestone	LIPA Task #3.2.1.6 Complete	0%	12/16/2020	12/16/2020

4.2. Risk Management Plan

The table below outlines the applicable risks and associated risk mitigations for the Telecom project.

Category	Project Risk	Mitigation
Resources	No holistic solution owner from PSEG LI to oversee entirety of solution	PSEG LI to designate a resource to be the holistic oversight for entire solution
Resources	Availability of resources due to other Storm duty priorities	Careful prioritization of projects with LIPA recommendations as top priority in order to complete all tasks/milestones on time.
Schedule / Cost	Vendor delays cause the schedule to shift and key project milestones are not able to be met on time	Work with the vendor to quickly resolve impediments.
Program Management	Additional recommendations for improvement are developed and will need to be added to this workstream	Additional recommendations that have activities similar to those addressed in this project will be identified and logically grouped within tracks. Resource requirements will be identified. Where necessary, contract resources will be hired to back fill normal job responsibilities

4.3. Issue Resolution Plan

Issues and risks will be identified by the PSEG LI Team and the PMO daily. These items will be logged in an issue/risk tracker. The information in the tracker will be reviewed by the steering committee each week. The steering committee will determine the appropriate actions (if necessary) to get the project on track. The issue/risk tracker will be used to track items to closure, identifying the resolution date and course of action taken.

4.4. LIPA Reporting Plan

Weekly status reports for all recommendations, containing project progress and documentation will be provided to LIPA by Zeeshan Sheikh.

5. Technical Execution Plan

5.1. Technical Approach

5.1.1 Technical Improvements:

N/A

5.1.2 Process Improvements:

This will include improved vendor coordination before, during and after storms, daily operations and other impactful events. Internal process improvements will also be made to include enhanced communications with key stakeholders, updated escalation matrices and processes and quality assurance reviews. Should lessons learned be developed from these periodic interactions, any and all changes will be clearly documented and approved and distributed for execution.

5.2. Quality Assurance Plan

1 The team will adhere to the PSEG's IT standards for the deployment of this project. PSEG LI IT SharePoint will be used as the document repository.
2 The deliverables will follow the following QA processes:
   a. Team lead review and signoff
   b. Peer Review (PSEG)
   c. Subject Matter Advisor Review as necessary
   d. PSEG Signoff by PSEGLI CIO and President & COO of PSEGLI
   e. Independent Verification and Validation by LIPA CIO

5.3. Documentation Plan

Throughout the project lifecycle the implementation team will document and deliver the key deliverables as listed above in Section 2. The due date of each deliverable will be based off the

Project Schedule as outlined in Section 4.1. A final Project Closure Document will be delivered once all LIPA Recommendations in this implementation plan are completed.

Project Artifacts	Description
Operational / Standard Operating Procedure Document	PSEG Service Operations team's operational procedure documentation and approvals

Revision History

Name	Date	Reason for Changes	Version
David Nidoh	12/10/2020	initial draft	1.0 draft 1
David Nidoh	12/11/2020	final draft	1.0 draft 2

PSEG Long Island

Project Implementation Plan

for

Isaias Task Force Recommendation Implementations

Recommendation No. 3.2.4.3

Project Title: 3.2.4.3 Introduce the capability to quickly decouple the web and mobile apps from the OMS, so that when unresponsiveness is detected, alternate messaging can be provided to the customer and the OMS can be relieved of incoming transactional pressure

Table of Contents

1. Project Definition

PSEG Long Island provides multiple digital channels to customers and stakeholders for both routine and storm and outage related communications. Routine communications include account, billing, and energy usage information; Storm and outage communications include downed wire and outage reporting, customer status and estimated restoration times, overall system status and service restoration activities, and pre-storm notifications.

The project goal is to verify that customers are still able to contact PSEG through the mobile and corporate website in the event of an OMS failure. The objectives, end state and success criteria of the project are defined below.

Any mention of the "Digital Channels" in this document refers to the channels below.

- PSEG LI Mobile App
- PSEG corporate website
- MyAccount Customer Portal

1.1. Project Purpose, Objectives, and Success Criteria

1.1.1 Project Objectives:

The objectives of the project are:

1. Introduce the capability to quickly decouple the web and mobile apps from the OMS when unresponsiveness is detected
2. Provide alternate messaging to the customer in the event OMS is unresponsive
3. Control processing conducted by OMS in real time during storm events

Note: *While the original intent of the recommendation refers solely to the mobile app and web interface with OMS, the solution PSEG LI is pursuing in decoupling the OMS will also address other digital channels including IVR, HVCA, Kubra, Google, Alexa.*

1.1.2 Project End State and Success Criteria:

Web and mobile apps are functional in the absence of OMS. Outage reports are directed to an alternative data sink which can be consumed by alternate and deferred pathways.

2. Project Deliverables

Deliverable	Delivery Date
Design documentation for tested and deployed ability to decouple web and mobile apps from OMS.	3/12/21
Process documentation for tested and deployed ability to decouple web and mobile apps from OMS.	6/24/2021

2.1. Assumptions, Dependencies, and Constraints

2.1.1 Assumptions:

- PSEG LI has the necessary resources in place from an internal and third-party standpoint to complete all of the objectives/recommendations including implementation work as needed
- There will be no time included in the schedule for exploration of additional third-party vendors for enhanced solutions the project team will move forward to implement recommendations and enhanced solutions for the existing PSEG LI framework and vendor partnerships
- Vendor resources will be available to provide SME time and answer any questions for respective applications

2.1.2 Dependencies:

- PSEG LI has a dependency on XTENSIBLE for performing changes on the Sonic / MuleSoft ESB
- PSEG LI has a dependency on CGI in modifications made to the web services on the OMS to provide outage status and report outages
- PSEG LI has a dependency on the OMS team to ensure the OMS is stood up and available for end to end testing activities requiring the digital channels
- The final implementation date for this solution has to coincide with the re-platform of OMS v6.7

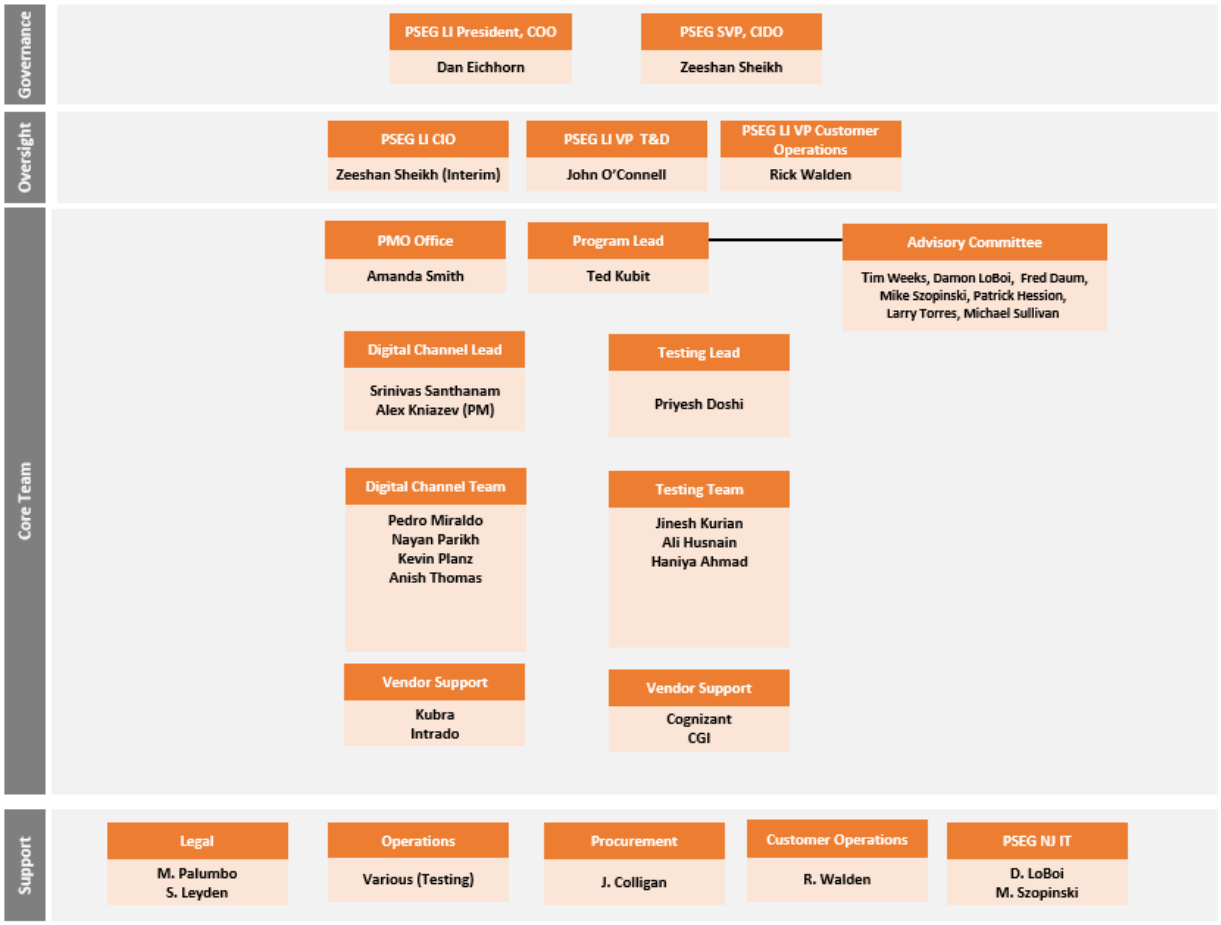
2.1.3 Constraints:

- Holiday schedules prevent the immediate ramp up for some of the activities in this plan
- Some resources will not be fully dedicated to Digital Channel Enhancement activities due to competing projects
- Storm season will be a priority for PSEG LI resources who will be unavailable when performing storm roles or resolving current production issues

3. Project Structure

3.1. Internal Project Organization

The Digital Channels Team, Testing Team along with vendor support from Kubra, Intrado, and Cognizant will implement the Digital Channels project. The chart below shows the internal project organization and the groups responsible for the Digital Channels project:



3.1.1 Roles and Responsibilities :

Roles and responsibilities for the Digital Channels Enhancement project are outlined in the table below:

Role	Name	Responsibilities
Steering Committee	Dan Eichhorn *(Chair)* Zeeshan Sheikh John O'Connell Rick Walden	• Championing the PSEG LI Storm Restoration initiative • Establishing guiding principles for the project • Ensuring project activities remained aligned with the guiding principles as defined • Providing guidance and input on key project decisions • Challenging the project team where appropriate • Approving major changes to the project's scope, objectives, timelines, costs, etc. • Acting as the decision maker for issues requiring escalation • Removing institutional barriers if and when they arise by serving as a project advocate
Leadership	PSEG LI CIO - Zeeshan Sheikh (Interim)	• Ensuring workstreams adhere to guiding principles as defined by project leadership • Managing issues and decision making • Removing obstacles that impede the success of the overall project Providing strategic guidance • Challenging the project team where appropriate

		• Approve procurement of external parties (as needed)
Advisory Committee Members	Tim Weeks Damon LoBoi Mike Szopinski Fred Daum Patrick Hession Larry Torres Michael Sullivan	• Providing guidance and input on key project decisions • Assisting in the procurement of external parties (as needed) • Removing obstacles that impede the success of the overall project • Providing subject matter expertise to the project • Challenging the project team where appropriate
Digital Channel Lead	Srinivas Santhanam / Alex Kniazev (ACN)	• Drive workstream tasks and deliver recommendations for Solution Design Specification • Provide support for Testing • Aid in the development functional requirements • Provide input on requirement / design • Coordinating Business Resources to support the project • Key Point of contact to for questions from the HVCA IVR vendor, Outage Map vendor and Xtensible Team • Providing sign off for deliverables that require business input/acceptance • Delivering the Digital Channels project on time and on budget
Project Manager	Kevin Planz	• Reporting overall status of the project to Stakeholders and Program Leadership • Identifying and escalating resource issues • Providing status reports for delivery to internal and external stakeholders (LIPA, DPS) • Manage resources, schedule, issues, risks and change requests • Process development, requirements definition, • Providing subject matter expertise to the project • User Impact Analysis • Facilitating workshops
Performance Engineer	Sri Kanaparthy	• Supporting Build/Test/Deploy Activities • Assist with Environment setup • Coordinating Development activities • Assist with Technical Design and Architecture • Assist with Transfer of Environments
Technical Architect	Pedro Miraldo	• Supporting Build/Test/Deploy Activities • Environment setup • Assist in the configuration of the Digital Channels • Coordinating Development activities • Technical Design • Testing Lead • Transfer of Environments
Business Lead	Nayan Parikh	• Process development, requirements definition, functional design • Technical Design • Supporting vendor questions and workshops Testing Execution
Test Lead	Sikder Islam	• Test Script Development • Test Script Execution for Assembly / Unit Test • Test Execution
Environment Lead	Anish Thomas	• Technical Design development • Environment design support
Test Project Manager	Priyesh Doshi	• Reporting overall testing status of the project to Stakeholders and Program Leadership

		• Identifying and escalating resource issues • Developing Testing Dashboard to accurately display current test execution • Manage resources, schedule, issues, risks and change requests • Providing testing subject matter expertise to the project • Defect Management

3.2. Other Stakeholders

Identification of other internal and external project stakeholders is shown below*:*

Organization/Team	Name	Responsibilities
Long Island Power Authority	Mujib Lodhi, Rick Shansky	• Overall oversight of the entire project portfolio
Department of Public Service	Joseph Suich, Kevin Wisely	• Overall oversight of the entire project portfolio

4. Project Plan

4.1 Project Work Plan

LIPA ID	Type	Task Name	Current Status	% Complete	Start	Finish
3.4	**Recommendation**	**Decouple OMS from the website and mobile apps**	**Not Started**	**0%**	12/7/20	7/23/21
3.4	Subtask	Workshop to determine the system capabilities of website and mobile apps integrating with OMS	Not Started	0%	1/4/21	1/8/21
4.17	Subtask	Leverage Design for Recommendation 4.17 for decoupling OMS from Web and Mobile Apps	In Progress	5%	12/7/20	2/5/21
3.4	Subtask	Design Solution to provide alternate messaging to customers	Not Started	0%	1/11/21	2/5/21
3.4	Subtask	Create Technical Design for alternate messaging	Not Started	0%	2/8/21	3/5/21
3.4	**Document**	Functional Design to de-couple OMS and alternate messaging	Not Started	0%	2/5/21	2/5/21
3.4	**Document**	Technical Design to de-couple OMS and alternate messaging	Not Started	0%	3/5/21	3/5/21
3.4	Subtask	Design Review and Sign Off	Not Started	0%	3/8/21	3/12/21
3.4	Subtask	LIPA Design Review and Sign off	Not Started	0%	3/8/21	3/12/21
3.4	*Milestone*	*Design Review and Sign Off*	*Not Started*	*0%*	*3/12/21*	*3/12/21*
3.4	Header Task	Develop Solution and Unit Test	Not Started	0%	3/15/21	5/7/21
3.4	Subtask	Update Technical Design for alternate messaging	Not Started	0%	3/15/21	3/19/21
3.4	Subtask	LIPA Build Approval	Not Started	*0%*	5/7/21	5/7/21
3.4	*Milestone*	*Build Complete*	*Not Started*	*0%*	*5/7/21*	*5/7/21*
3.4	Subtask	Create Test Strategy / Test Plan	Not started	0%	3/15/21	3/26/21
3.4	**Document**	Test Strategy / Test Plan	Not started	0%	3/26/21	3/26/21
3.4	Subtask	Test Data & Environment Preparation	Not Started	0%	3/15/21	3/26/21
3.4	Subtask	SIT / UAT Testing	Not Started	0%	5/10/21	6/18/21
3.4	Subtask	Defect Resolution	Not Started	0%	5/17/21	6/18/21
3.4	Subtask	SIT / UAT Review and Sign Off	Not Started	0%	6/21/21	6/25/21

3.4	Subtask	LIPA Testing review and sign off	Not Started	0%	6/21/21	6/25/21
3.4	*Milestone*	*Sit / UAT Sign off*	*Not Started*	*0%*	*6/25/21*	*6/25/21*
3.4	Subtask	Performance / Penetration Testing	Not Started	0%	6/28/21	7/9/21
3.4	Subtask	Document Testing Results	Not Started	0%	7/12/21	7/13/21
3.4	**Document**	Test Results documentation	Not Started	0%	7/13/21	7/13/21
3.4	Subtask	Document Process Steps for operationalizing the solution (BCP)	Not Started	0%	7/14/21	7/15/21
3.4	**Document**	Process Documentation for De-Coupling Solution	Not Started	0%	7/15/21	7/15/21
3.4	*Milestone*	*Business Process Defined*	*Not Started*	*0%*	*6/24/21*	*6/24/21*
3.4	Subtask	Review and sign off of final solution	Not Started	0%	7/16/21	7/22/21
3.4	Subtask	LIPA Review and sign off	Not Started	0%	7/16/21	7/22/21
3.4	*Milestone*	*Solution Acceptance*	*Not Started*	*0%*	*7/22/21*	*7/22/21*
3.4	Subtask	Deployment of solution	Not Started	0%	7/23/21	7/23/21
3.4	*Milestone*	*Solution Deployed*	*Not Started*	*0%*	*7/23/21*	*7/23/21*

4.1. Risk Management Plan

The table below outlines the applicable risks and associated risk mitigations for the Digital Channels project.

Category	Project Risk	Mitigation
Resources	Resource constraints from Digital team due to competing projects.	Assign and commit business and IT resources and verify they are available to support this project. As necessary, hire contract resources to back fill normal job responsibilities.
Resources	No holistic solution owner from PSEG LI to oversee entirety of solution.	PSEG LI to designate a resource to be the holistic oversight for entire solution.
Resources	Availability of resources due to other Storm duty priorities.	Careful prioritization of projects with LIPA recommendations as top priority in order to complete all tasks/milestones on time.
Schedule / Cost	Contract negotiation could delay project due to multiple vendor partners involved for making changes to the entire architecture.	PSEG LI to expedite contract approvals and determine if there are options for performing some work internally.
Schedule / Cost	Vendor delays cause the schedule to shift and key project milestones are not able to be met on time.	Work with the vendor to quickly resolve impediments.

Schedule / Cost	The activities outlined in the Digital Channels project become more complex than anticipated.	Review the additional work required to complete the project with the steering committee. Add the scope required complete the project to the implementation plan. Clearly identify the steps that will be taken to anticipate this complexity in future projects.
Program Management	Lack of Scope/Requirements control including changes needed to legacy IT systems.	Lack of scope/requirements control is the leading cause of budget and schedule overruns for this scale of project. It will be critical to closely define project scope/requirements, quickly clarify any uncertainties as they arise, and escalate as required. Any changes in scope/requirements must be agreed-to by the executive steering committee.
Program Management	Additional recommendations for improvement are developed and will need to be added to this work stream.	Additional recommendations that have activities similar to those addressed in this project will be identified and logically grouped within tracks. Resource requirements will be identified. Where necessary, contract resources will be hired to back fill normal job responsibilities.

4.2. Issue Resolution Plan

Issues and risks will be identified by the PSEG LI Team and the PMO daily. These items will be logged in an issue/risk tracker. The information in the tracker will be reviewed by the steering committee each week. The steering committee will determine the appropriate actions (if necessary) to get the project on track. The issue/risk tracker will be used to track items to closure, identifying the resolution date and course of action taken.

4.3. LIPA Reporting Plan

Weekly status reports for all recommendations, containing project progress and documentation will be provided to LIPA by Zeeshan Sheikh.

5. Technical Execution Plan

5.1. Technical Approach

5.1.1 Configuration of Applications:

For any changes to configuration of applications, vendors will be contacted when needed and internal infrastructure will be adjusted accordingly. Testing will be executed to verify changes are working as intended.

5.1.2 Changes to webservices:

Changes to existing webservices or new webservices will be developed on the preferred development platform at PSEG LI and code will be reviewed and unit tested prior to deploying code to the test environment. SAT and SIT testing will occur in the test environment to verify functionality is working as intended.

5.2. Quality Assurance Plan

The team will adhere to the PSEG's IT standards for the deployment of this project. PSEG LI IT SharePoint will be used as the document repository.

An individual test plan will be created, and for this recommendation it will include the following: Scope of testing, Test Criteria, Tests to be performed (e.g.: Functional, Acceptance, Regression, Performance Testing, End to end).

Test plan and test results will be signed off by PSEGLI CIO and President & COO of PSEGLI, and shared with LIPA upon completion

5.2.1 QA Methodology:

- The team will adhere to the PSEG's IT standards for the deployment of this project. PSEG LI IT SharePoint will be used as the document repository.
  The deliverables will follow the following QA processes:
  i. Team lead review and signoff
  ii. Peer Review (PSEG)
  iii. Subject Matter Advisor Review as necessary
  iv. PSEG Signoff by PSEGLI CIO and President & COO of PSEGLI
  v. Independent Verification and Validation by LIPA CIO

- An individual test plan will be created, and for this recommendation it will include the following: Scope of testing, Test Criteria, Tests to be performed (e.g.: Functional, Acceptance, Regression, Performance Testing, End to end).
- Test plan and test results will be signed off by PSEGLI CIO and President & COO of PSEGLI, and shared with LIPA upon completion

5.2.2 Test Scope:

Testing of incoming calls from a future storm will incorporate the following digital channels:

Channel	Test Plan (High Level)	Test Outcome
PSEG LI Mobile App	Simulate incoming outage calls from this channel	Verify Middleware is able to capture incoming outage calls and prevent transfer to OMS
PSEG corporate website	Simulate incoming outage calls from this channel	Verify Middleware is able to capture incoming outage calls and prevent transfer to OMS
MyAccount Customer Portal	Simulate incoming outage calls from this channel	Verify Middleware is able to capture incoming outage calls and prevent transfer to OMS

5.3. Documentation Plan

Throughout the project lifecycle the implementation team will document and deliver the key deliverables as listed above in Section 2. The due date of each deliverable will be based off the Project Schedule as outlined in Section 4.1. A final Project Closure Document will be delivered once all LIPA Recommendations in this implementation plan are completed.

Project Artifacts	Description
Functional Design to de-couple OMS and alternate messaging	Create a functional design document to de-couple OMS and alternate messaging.

Technical Design to de-couple OMS and alternate messaging	Create a technical design document to de-couple OMS and alternate messaging.
Test Strategy / Test Plan	Implement a test strategy by creating a test plan document.
Test Results documentation	Create a document comprised of the test results.
Process Documentation for De-Coupling Solution	Create a document showing the process for the de-coupling solution.

Revision History

Name	Date	Reason for Changes	Version
Alexander Kniazev/Pedro Miraldo	12/10/2020	Initial Draft	1.0
Alex Kniazev/ Srini/Kevin	12/11/2021	Updated Draft	1.1

PSEG Long Island
Project Implementation Plan

for

Isaias Task Force Recommendation Implementations

Project Title: AMI Deployment

Recommendation No.:

LIPA ID	Recommendation
5.4.2	Accelerating the deployment of smart meters and the full integration of smart meters with OMS so that outage reports will be available to OMS more rapidly and embedded outages (i.e., small-scale outages downstream of larger-scale outages) will be more readily identified, thus enhancing the efficiency of job dispatch.

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1. Project Definition

LIPA began deploying Advance Metering Infrastructure (AMI) meters through pilot projects and targeted installations as early as 2009. Through these initiatives LIPA, and beginning in 2014, PSEG Long Island, have learned much about the customer impacts of AMI, how to integrate technology systems, and the need for process changes and workforce training to support the installation and automation of meter-related activities. In 2018, LIPA's Board of Trustees approved (and was recommended by NYS DPS) PSEG Long Island's Utility 2.0 plans for an AMI program (Plan) to expand meter deployment and AMI-enabled capabilities and related customer tools across Long Island.

A major element of the Plan was the full-scale deployment of approximately 1.1 million AMI smart meters from 2019 through 2022. The Plan included projected costs of approximately $230.3 million in capital expenses and $49.7 million in O&M expenditures, of which Smart Meter deployment comprised approximately $196.2 million of these total capital expenses and $2.7 million of the O&M expenditures over the four-year deployment period.

To date, PSEG Long Island has deployed meters at a faster pace than planned while remaining within budget and has launched new customer engagement initiatives and tools that leverage data from these new meters. PSEG Long Island is focused on continuing to improve customer engagement by leveraging digital capabilities that are enabled by deploying AMI across Long Island. These capabilities will continue to build and improve over time, with the goal to continuously extract value from AMI investment for the benefit of PSEG Long Island's customers and the Long Island electric operation.

In 2018, PSEG Long Island completed the AMI network infrastructure and targeted large commercial time of use customers for AMI meter installation and in the first quarter of 2019. The initial deployment was expanded to a large-scale smart meter deployment with the installation of over 300,000 meters, bringing the system total to over 430,000 meters by year's end. As of November 30, 2020, there are currently 734,000 communicating meters system-wide and PSEG Long Island has now begun to further accelerate meter deployment with a targeted 95% completion by September 1, 2021.

To accommodate this acceleration, PSEG Long Island has redeployed additional resources from its Meter Reading team and outfitted and trained these personnel to safely perform AMI installations. Agreements were made with meter manufacturers for additional meter inventory and, for efficiency, existing meter warehouse space was centralized to better align geographically with the remaining deployment territory. As with the existing complement of installers, these expanded resources are being dispatched to geographic areas to perform AMI Installations in accordance with pre-notification procedures to the affected customer base.

PSEG Long Island continues deploying AMI across LIPA's service territory to maximize customer benefits and operational savings. Smart meters with AMI offer increased accuracy and enable new capabilities like remote metering, automated move-in and move-out requests, and remote connect and disconnects. Furthermore, they provide capabilities that have been shown to assist storm restoration processes. Implementing these capabilities are key components to unlocking the full benefit of AMI and the further acceleration of these AMI meter installations allows for their realization sooner.

1.1. Project Purpose, Objectives, and Success Criteria

Project Objectives:

The purpose of this project is to promote the further acceleration of AMI meter deployment across Long Island so as to position the Company to more fully leverage the associated customer and operational benefits earlier than originally planned.

As of November 30, 2020, PSEG Long Island has installed 734,000 communicating meters system-wide and has begun to further accelerate meter deployment with a targeted 95% deployment completion by September 1, 2021.
PSEG Long Island is committed to providing customers with information and opportunities to control their energy usage. Through foundational investments such as the deployment of AMI meter technology and systems, PSEG Long Island is providing customers with more granular and timely usage data, viewable through a streamlined platform and easily transferrable to authorized third parties to leverage for value-adding services and advanced solutions.

Over time, initiatives to empower customers will evolve and improve by applying the insights made available through PSEG Long Island's customer research and data analytics. These insights will enable customers to more effectively take control of their energy usage through both self-serve and agent-assisted channels.

PSEG Long Island also continues deploying AMI across its service territory to maximize other customer benefits and operational savings. Newly proposed tariffs provide customers with additional cost saving opportunities. Smart meters also offer increased accuracy and enable new capabilities like remote meter reading, automated move-in and move-out requests, remote connects and disconnects, and enhanced outage detection and reporting that have shown to be beneficial in assisting with storm restoration. Implementing these capabilities are key components to unlocking the full benefit of AMI and become more widespread as the volume of AMI meters installed expands on the system.

***Project End State and Success Criteria**:*

As part of the Plan, the deployment of 1.1 million meters throughout the service territory of Nassau, Suffolk and the Rockaways was targeted to be completed by the end of 2022. To date, PSEG Long Island has remained ahead of the Plan's installation targets and has begun to further accelerate meter deployment with a targeted 95% completion by September 1, 2021.

2. Project Deliverables:

Deliverable	Delivery Date	Comments
Complete 95% of total AMI Meter Installations	September 1, 2021	Project is targeting further acceleration to reach 95% of AMI installations by September 1, 2021. This will also help to condense the overall project timeline for "complete" AMI deployment.

2.1. Assumptions, Dependencies, and Constraints

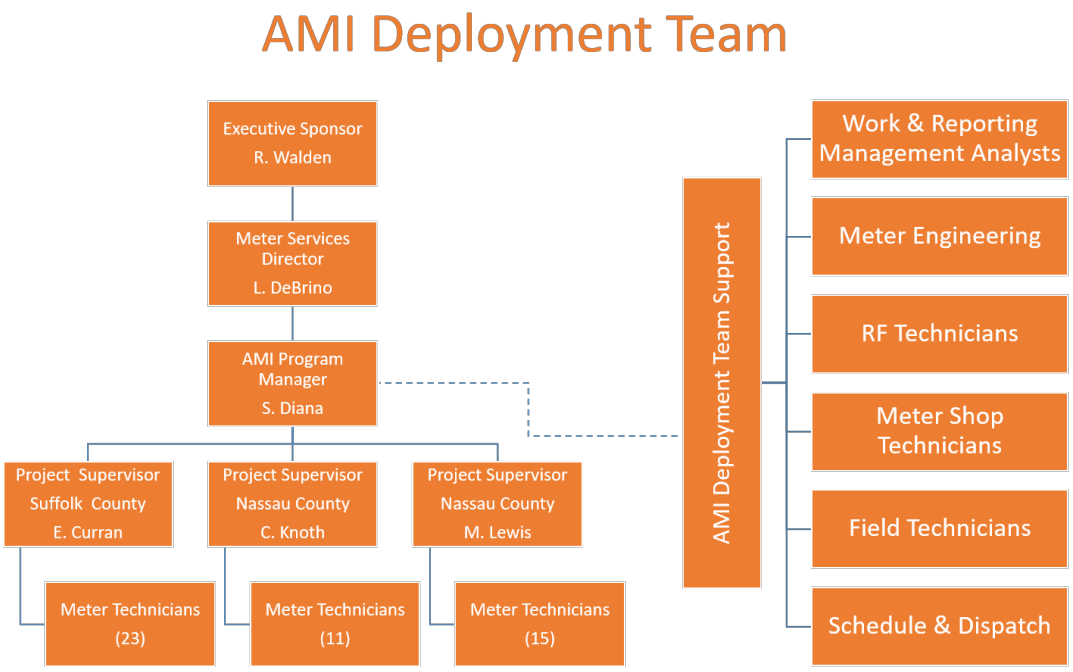
- Continued ability to install AMI meters in spite of COVID-19 restrictions
- Redeployment of appropriate complement (16 FTE) of Meter Readers to AMI Deployment Team
- Continued resumption of inside AMI meter installations (i.e., meter rooms) - currently under stringent COVID-19 safety protocols
- Continued meter/product availability delivered in accordance with project need dates

- Approval and funding of remaining deployment budget
- Continued customer acceptance of AMI technology, with no unforeseen significant increase to "opt-out" rate
- Acknowledgement of potential additional "stranded" personnel (i.e., Meter Readers/AMI deployment personnel with reduced or eliminated workload with project expansion) and any resulting additional O&M costs due to project acceleration and corresponding reduced time to attrite "stranded" personnel
- Successful cybersecurity audit of AMI system with no findings that delay implementation

3. Project Structure

3.1. Internal Project Organization

Dan Eichhorn is the Executive Sponsor for this Project. The Project Organization is as follows:



Role	Name	Responsibilities
Project Sponsor	Rick Walden	• Ensure work streams adhere to guiding principles as defined by project leadership • Manage issues and decision making • Remove obstacles that impede the success of the overall project Providing strategic guidance • Challenge the project team where appropriate • Approve procurement of external parties (as needed)

Role	Name	Responsibilities
Meter Services Director	Lou DeBrino	• Ensure project activities remained aligned with the guiding principles as defined • Provide guidance and input on key project decisions • Challenge the project team where appropriate • Approve major changes to the project's scope, objectives, timelines, costs, etc. • Act as the decision maker for issues requiring escalation • Remove institutional barriers if and when they arise by serving as a project advocate • Report project status
AMI Project Manager	Scott Diana	• Oversee/drive daily AMI Deployment operational activities • Oversee/drive daily AMI Deployment logistical activities • Ensure appropriate staffing and training • Provide guidance and input on key project decisions • Remove obstacles that impede the success of the overall project • Provide subject matter expertise to the project • Monitor field productivity
AMI Project Supervisors	Mike Lewis Chris Knoth Erik Curran	• Oversee daily AMI deployment field operations • Manage field safety • Manage daily workplan • Ensure appropriate inventory (meters, tools and equipment)
AMI Project Technicians	Various	• Install AMI Meters at customer
AMI Project Dispatchers	Various	• Prepare and assign daily work packages for installers
AMI Project Analysts	Jacqueline Montanaro Danilo Marin	• Create monthly Batch load for work dispatch • Tracks and reports project metrics including status/progress • Manage and report project budget

3.2. Other Stakeholders

Back Office Billing:	Processes meters changes within the customer accounting system (CAS)
Customer Engagement:	Prepares and distributes customer communications and collateral; assists with opt-out tracking and remediation
Procurement:	Supports vendor management and procurement of project contract support, meters and other necessary services or materials
Project Vendors:	Provides project support, smart meters and other necessary materials (i.e., Landis + Gyr, Elster, Aclara)
DPS:	Reviews project and provides oversight
LIPA:	Provides project review, oversight and approval

3.3. Project Work Plan

Year	Annual Target (U2 +Core)	Annual Installation (U2 + Core)	Cumulative System Count (U2 + Core)	Notes
2018	N/A	66,488	129,072	
2019	250,000	304,932	434,004	
2020 YTD	250,000	300,170	734,174	Through November
2021 Original	250,000	TBD	750,000	Per the 2018 Plan
2021 Accelerated	~370,000	TBD	~1.1 million	By September 1

AMI Deployment Monthly Installation Targets

Month	2020 Target (U2 + Core)	2020 Actual (U2 + Core)	2021 Original Target (U2 + Core)	2021 Accelerated Target (U2 + Core)
January	20,833	27,586	20,833	47,500
February	20,833	15,577	20,833	47,500
March	20,833	22,352	20,833	47,500
April	20,833	34,814	20,833	47,700
May	20,833	34,553	20,833	47,700
June	20,833	32,805	20,833	47,700
July	20,833	32,117	20,833	47,700
August	20,833	14,254	20,833	17,700
September	20,833	32,956	20,833	4,700
October	20,833	30,129	20,833	4,700
November	20,833	23,027	20,833	4,700
December	20,833	35,000 (est.)	20,833	4,700
Total Incremental	**250,000**	**335,170**	**250,000**	**369,800**

- Milestones/Metrics
  - To date, PSEG Long Island has deployed meters faster than the 230,000 annual Plan target.
  - In response to COVID-19 restrictions regarding Field Collections activities, Field Collectors have been repurposed to assist with AMI installations during the Pandemic
  - Additional resources have been transitioned from Meter Reading to assist with the accelerated deployment. Complement has been increased by 40% from 39 to 55 installers (see below details).
  - Orders for additional meters and associated equipment have been put in place to address increased need and timing.

  - Meter Warehouse space has been centralized from former satellite warehouses (i.e., Merrick, Bellport) to Hauppauge facility for better geographic alignment with remaining deployment territories.

- Expand AMI Deployment Team

  - Calculate appropriate complement of installer resources from Meter Reading Team to supplement existing team for accelerated installation – COMPLETE
  - Identify/notify personnel for redeployment – COMPLETE
  - Procure appropriate trucks, tools, tablets, PPE, etc. – COMPLETE
  - Assign appropriate supervision – COMPLETE
  - Conduct appropriate onboarding and training – COMPLETE
  - Initiate scheduling of new installers in dispatch system - COMPLETE

- Pre-Installation

  - Funding approval request
  - Procure and QC meter delivery
  - Distribute meters to deployment warehouses
  - Deploy initial customer outreach communications in accordance with work plan
  - Batch load monthly work plan

- Installation

  - Dispatch work to AMI Installers based on installation schedules
  - Install meters at residential and commercial customer locations
  - Continue customer outreach communications

- Post-Installation

  - Process Change Meters Orders within CAS
  - Process RIMLs within CAS
  - Post installation customer outreach communications
  - Track and report

3.4. Risk Management Plan

Please see below risks and associated mitigation efforts:

- Continued ability to install meters in spite of COVID-19 restrictions

  - Implementation of proper safety protocols (i.e. Job Hazard Analyses or JHAs) to ensure protection of employees and public
  - Employee training
  - Proactive customer communications on COVID-19 related installation protocols

- Continued resumption of indoor installations

  - Implementation of proper JHAs to ensure protection of employees and public
  - Employee training (including advanced PPE training)
  - Proactive customer communications on COVID-19 related installation protocols

- Continued meter/product availability delivered in accordance with project need dates

  - Ongoing dialog with vendors
  - Early procurement of meter inventory with on-site warehouse storage to protect against potential delays or COVID-19 related temporary manufacturer shut downs

- Approval and funding of remaining deployment budget

  - Open communication with LIPA, DPS and other key stakeholders
  - Visibility to monetary needs to senior leadership team
  - Proper representation at internal URB meetings as funding requests are needed

- Continued customer acceptance of AMI technology with no unforeseen significant increase to "opt-out" rate

  - Proactive customer communications
  - Trained representatives to address customers' questions and concerns

- Acknowledgement of potential additional "stranded" personnel (i.e., Meter Readers/AMI deployment personnel with reduced or eliminated workload with project expansion) and any resulting additional O&M costs due to project acceleration and corresponding reduced time to attrite "stranded" personnel

  - Visibility to senior management
  - Ongoing planning for appropriate placement within PSEG Long Island at end of project

3.5. Issue Resolution Plan

If issues arise, they will be raised and discussed among project team. If they cannot be resolved at that level, they will be raised through the organization as necessary to address and bring to closure (i.e., Measurement Services Manager, Meter Services Director, Customer Operations VP, etc.). Problems and issues are also captured and reported as part of "Issues/Challenges" section of Quarterly Utility 2.0 Outcomes Dashboard and at internal Monthly U2.0 Steering Committee Meetings.

3.6. LIPA Reporting Plan

PSEGLI will coordinate with LIPA to determine use of Smartsheet application.

4. Technical Execution Plan

4.1. Technical Approach

Continuation of current installation practices with application of additional deployment resources to facilitate accelerated deployment (see details included in Section 3.3)

4.2. Quality Assurance Plan

The below list provides a summary of actions taken throughout the installation process for quality assurance:

- Meter acceptance testing performed at time of meter delivery

- Meters checked in field after installation to confirm load on meter
- Annual regulatory meter testing programs for continued accuracy (i.e., Selective and Periodic programs)

4.3. Documentation Plan

Please see information in below table:

Document	Created By	Reviewed By	Target Date	Distribution
Utility 2.0 Long Range Plan	Customer Operations	LIPA	12/31/2022	
URB Funding Approval	Meter Services	PSEG LI SLT	Annual	
LIPA Board Book Approval	Business Services	LIPA	Annual	
OSA Metric – AMI Installations	Meter Services	LIPA	Annual	
DPS – Quarterly Progress Update	Customer Operations	DPS/LIPA	Quarterly	
OSA Scorecard Report (re. AMI Program Metrics)	Performance Analysis and Reporting	PSEG LI	Monthly	

Revision History

Name	Date	Reason for Changes	Version
Louis DeBrino	12/03/20	initial draft	1.0 draft 1