Review of

Florida Power & Light Company's Storm Protection Plan Program Internal Controls

August 2025

BY AUTHORITY OF

The Florida Public Service Commission
Office of Auditing and Performance Analysis

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I. Executive Summary

A. Purpose and Objectives

The Office of Auditing and Performance Analysis initiated this operational audit at the request of the Florida Public Service Commission's (FPSC or Commission's) Office of Industry Development & Market Analysis.

The primary objectives of this audit were to review, document, and assess the adequacy of Florida Power & Light Company's (FPL or Company) internal controls governing the cost, scheduling, and project execution of its 2020-2029 and 2023-2032 Storm Protection Plans (SPPs) programs and procedures for:

- Workflow planning and project implementation
- Scheduling and tracking project status
- Cost control, budget adherence, and identification of variances
- Ongoing self-assessment of compliance with its SPP and FPSC rules

Commission audit staff also documented and assessed FPL's SPP process improvements and resulting impacts.

B. Scope

As authorized by Subsection 350.117(2) and (3), Florida Statutes (F.S.), management and operation audits are conducted by staff to assess utility performance and the adequacy of operations and controls:

> (2) The Commission may perform management and operation audits of any regulated Company. The Commission may consider the results of such audits in establishing rates; however, the Company shall not be denied due process as a result of the use of any such management or operation audit.
>
> (3) As used in this section, "management and operation audit" means an appraisal, by a public accountant or other professional person, of management performance, including a testing of adherence to governing policy and profit capability; adequacy of operating controls and operating procedures; and relations with employees, customers, the trade, and the public generally.

Given the audit objectives, Commission audit staff's review focused on assessing FPL's implementation and management of each SPP program and associated projects. Audit staff reviewed and performed assessments of FPL's SPP program-related internal controls in the following key areas:

- Management oversight
- Staffing organizational structures
- Procurement of contracted resources
- Risk assessments and potential impact
- Program planning and execution
- Program project prioritization
- Estimation and revision of project timelines
- Automated scheduling and tracking systems
- Cost-tracking system software
- Inventory control practices
- Internal audits and use of consultants
- Quality assurance/control (QA/QC) reviews
- Contractor performance evaluations
- Performance metrics and accountability tools

This review places primary importance on internal controls as referenced in the Institute of Internal Auditors' *Standards for the Professional Practice of Internal Auditing* and in the *Internal Control - Integrated Framework* developed by the Committee of Sponsoring Organizations (COSO) of the Treadway Commission. The assessment of internal controls focuses on the five key elements of the COSO framework of internal control: control environment, risk assessment, control activities, information and communication, and monitoring. Commission audit staff seeks to comply with the Institute of Internal Auditors' Performance Standards 2000 through 2500.

C. Methodology

The information in this audit report was gathered through responses to document requests, on-site interviews, and conference calls with key FPL personnel accountable for implementing and managing the Company's SPP program-project activities. Commission audit staff also reviewed applicable Florida Statutes and FPSC rules.

D. Audit Staff Observations

Section F in Chapter II of this report highlights improvements FPL has implemented to its SPP programs since inception in 2020. Based on its analysis, Commission audit staff presents these observations:

- **FPL should separately identify in its SPP Annual Status Report the overhead versus underground hardening costs incurred for its Distribution Feeder Hardening and Distribution Lateral Hardening Programs**. Due to the infrequency, FPL does not specifically forecast overhead hardening versus undergrounding costs for its SPP feeder hardening and lateral hardening programs because a site-specific evaluation needs to be performed based on the existing conditions at the time of the project. While the Company's

work management system does not summarize those costs by overhead versus underground on a project basis, Commission audit staff believes that FPL should consider improving its method of tracking overhead versus underground hardening and associated costs. The Company has agreed to collect this information annually for both the Distribution Feeder Hardening Program and the Distribution Lateral Hardening Program.

- **FPL states that it has not at this time applied for any federal or state funding for the SPP programs and projects.** If FPL were to receive state or federal funding for a hardening project that mirrors a SPP program project, the Company should ensure proper internal controls are in place to not recover the associated costs through the Storm Protection Plan Cost Recovery Clause (SPPCRC).

- **FPL states that any improvements in non-extreme weather service reliability as a result of the SPP program projects are reflected in its performance reliability metrics CMI, CAIDI, SAIDI, SAIFI, etc.** SPP programs may improve the overall service reliability for customers. However, pursuant to Rule 25-6.030, F.A.C., Storm Protection Plan, the primary purpose of the SPP programs is to increase the resiliency of the electric grid from extreme weather events and not for the purpose of improving reliability, which are base rate-related (non-SPP programs). Therefore, the Company states that it does not, nor is it required to, determine achieved annual non-extreme weather (i.e., blue or gray-sky day) benefits for each SPP program.

- **FPL has a Storm Forensic Organization that continuously updates, compares, and evaluates hurricane impact and restoration data to measure performance of its hardened and non-hardened facilities.** This evaluation improves the Company's SPP project selection and prioritization process to more effectively target and strengthen facilities to reduce restoration costs and outage times, thereby enhancing resiliency and overall service reliability.

- **FPL has payment processing controls to ensure SPP contractors are paid in a timely manner to avoid a backlog of outstanding invoices.**

- **FPL has a multi-tiered oversight process that facilitates the effective and efficient management, implementation, and evaluation of its SPP programs.**

- **FPL currently uses third-party auditors to perform QA/QC inspections on all completed SPP projects.** The inspections measure contractor compliance and provide an additional layer of construction oversight.

- **FPL has negotiated long-term contracts with multiple manufacturers to help secure more inventory at lower average costs.** These efforts have allowed the Company to better mitigate the impacts of inflation and supply chain constraints to help keep program costs within budget.

- **FPL has implemented a comprehensive tracking and reporting system (i.e., Work Breakdown Structure) to record SPP capital costs and operations and maintenance**

(O&M) expenses only to the SPPCRC. Use of this system separates SPP costs from being recorded to base rates, which eliminates the potential for double recovery in both the SPPCRC and base rates.

- **FPL has a formalized SPP project variance reporting process to assist in managing projections against actuals and to identify needed corrective actions.**

II. Background and Perspective

FPL serves more than six million customer accounts across 43 counties within the peninsular and northwestern parts of Florida, representing more than half of Florida's population. As of year-end 2024, the Company operates a transmission and distribution electric grid that contains approximately 91,360 miles of electrical lines, including 81,823 miles of distribution lines and 9,537 miles of transmission lines, 1.4 million distribution poles, 83,573 transmission structures, and 921 substations of which 245 are transmission, 644 are distribution, and 32 are transmission with distribution.

A. History of Storm Hardening

Prior to the creation of the SPPCRC, transmission and distribution infrastructure hardening plans were ordered by the Commission in Order No. PSC-06-0351-PAA-EI, issued April 25, 2006, in Docket No. 20060198-EI. Updated plans were filed and reviewed at least every year thereafter. The intent of the plans was to mitigate restoration costs and outage times associated with extreme weather events and enhance reliability.

On June 27, 2019, the Florida Legislature enacted Section 366.96, F.S., entitled "Storm protection cost recovery." Section 366.96, F.S., requires FPL and other public utilities to file a transmission and distribution SPP at least every three years that covers the immediate 10-year planning period. The statute also created a SPPCRC to promote the timely recovery of costs incurred by a utility under its approved SPP.

Pursuant to Section 366.96, F.S., the Commission promulgated Rule 25-6.030 and Rule 25-6.031, F.A.C. Rule 25-6.030 requires FPL and other public utilities to file a SPP at least every three years with the Commission beginning in 2020. The rule further requires the SPP to include an estimate of rate impacts for each of the first three years for the utility's typical residential, commercial, and industrial customers. Rule 25-6.031 allows the utility to file a petition for recovery of associated costs through the SPPCRC. The Commission is required to conduct an annual hearing to address the petition to determine if the utility's SPP costs were prudently incurred and allowing recovery through the SPPCRC separate and apart from its base rates.

B. FPL's 2023-2032 SPP Programs

In 2020, two separate SPP programs for the 2020-2029 period were filed and approved by the Commission for FPL and the former Gulf Power Company (Gulf). Effective January 1, 2021, FPL and Gulf were legally merged and Gulf ceased to exist as a separate entity. With the appropriate additions of former Gulf employees, FPL managed the programs and projects included in both FPL's and Gulf's 2020 SPPs without any modification. All data provided in this report for calendar years 2022 and 2023 are for the consolidated FPL system with the former Gulf service area integrated into FPL as the Northwest Region.

Pursuant to Order No. PSC-2022-0389-FOF-EI, issued November 10, 2022, the Commission found that FPL's 2023-2032 SPP met the requirements of Rule 25-6.030, F.A.C., with modifications to remove the Company's proposed Transmission Access Enhancement Program[1] and transmission looping initiative[2] from the Transmission Hardening Program. The Company complied and filed a modified SPP on November 14, 2022, with the following programs:

Distribution Lateral Hardening	Targets certain overhead laterals that were impacted by recent storms and have a history of vegetation-related outages and other reliability issues for conversion from overhead to underground.
Distribution Feeder Hardening	Harden existing feeders and critical distribution poles, and design and construct new pole lines to meet extreme wind loading criteria.
Transmission Hardening	Replacing all wood transmission structures with steel or concrete.
Distribution Vegetation Management	Consists of a system-wide three-year average vegetation maintenance cycle for feeders; mid-cycle targeted vegetation maintenance for certain feeders; six-year average vegetation maintenance cycle for laterals; and continued education of customers through the Right Tree, Right Place initiative.
Transmission Vegetation Management	The North American Electric Reliability Corporation's (NERC) vegetation management requirements serve as the basis for this program.
Distribution Inspection	Eight-year inspection cycle for all wood and non-wood poles on FPL's system.
Transmission Inspection	Six-year inspection cycle for all transmission circuits, wood poles, substations, and other equipment; annual visual (ground patrol) inspection of wood and non-wood structures; six-year (above ground) inspection cycle for all wood structures; and ten-year inspection cycle for all steel and concrete structures.
Substation Storm Surge/Flood Mitigation	Harden substations susceptible to storm surge and/or flooding.

[1] The intent of the Transmission Access Enhancement Program was to develop access roads, bridges, and culverts at targeted transmission facilities to ensure access after an extreme weather event. The Commission concluded that this did "not meet the definition of storm hardening" as "maintaining access to transmission facilities is a regular activity and not a storm protection activity."

[2] The transmission looping initiative would add additional transmission lines into radially fed substations and additional transformers in single bank transmission substations. The Commission concluded that this did "not meet the definition of storm hardening" to "strengthen a utilities existing infrastructure" involves the construction of new redundant infrastructure, rather than hardening of existing facilities. "While we [the Commission] agree that such activity may enhance a utility's transmission system, it does not strengthen existing transmission facilities."

Figure 1 depicts the cost breakdown for each FPL SPP program over the 2023-2032 period. Total projected costs are $14.5 billion, with the Distribution Lateral Hardening and Distribution Feeder Hardening Programs amounting to $9.48 billion (65 percent) and $2.48 billion (16 percent), respectively. FPL has 1.9 times as many miles of overhead laterals as there are overhead feeders (approximately 27,000 miles vs. 14,000 miles, respectively).

The Vegetation Management ($767 million), Distribution Inspection ($669 million), and Transmission Inspection ($672 million) programs each account for approximately five percent of the $14.5 billion. The remaining Transmission Hardening ($329 million), Transmission Vegetation Management ($144 million), and Substation Storm Surge/Flood Mitigation ($16 million) programs sum to the remaining four percent of the total costs.

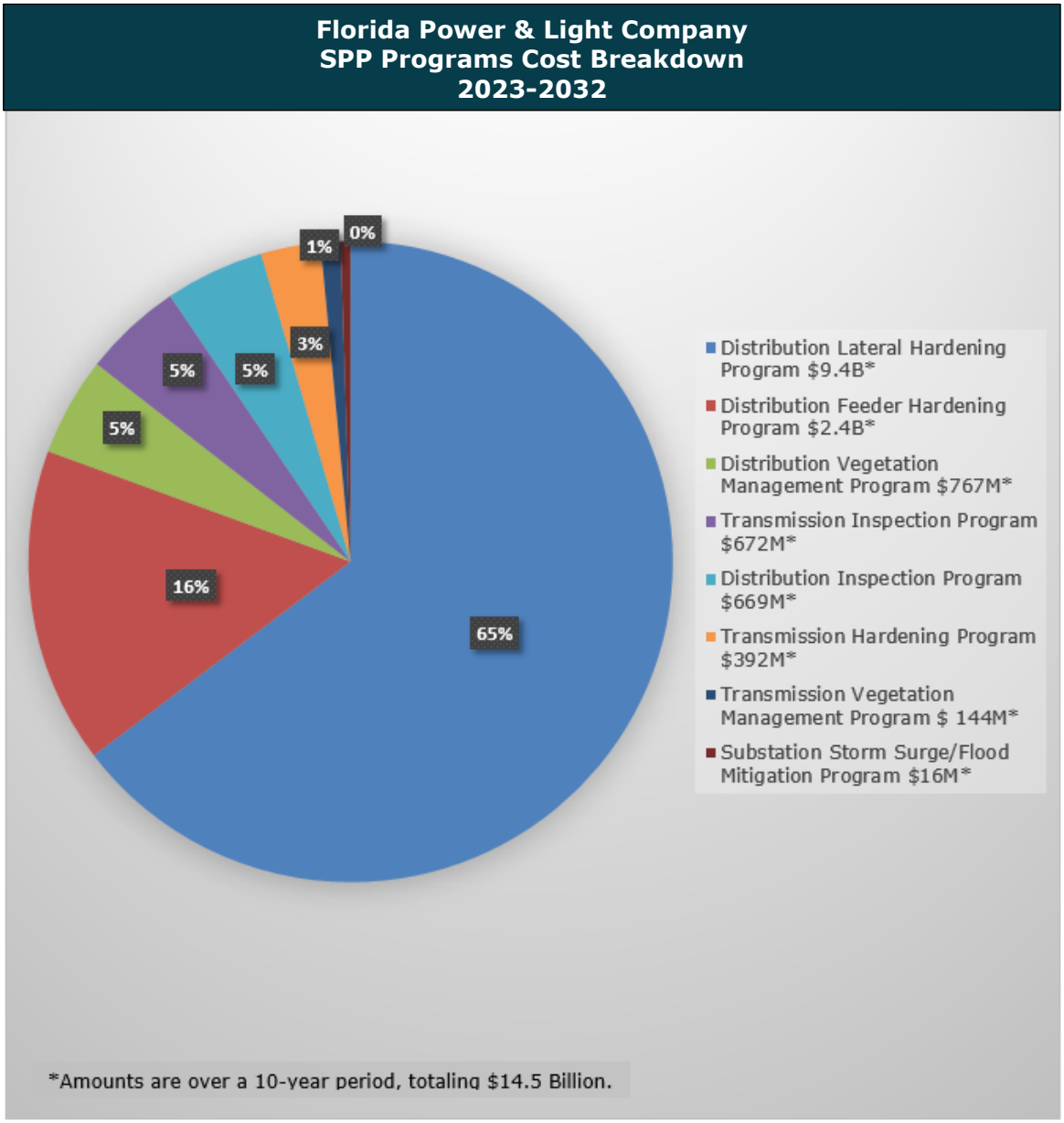

Figure 1 *Source: FPL's Response to Commission Audit Staff's DR 1.3, Attachment 10*

According to Rule 25-6.031(6)(b), F.A.C., storm protection plan costs recoverable through the clause shall not include costs recovered through the utility's base rates or any other cost recovery mechanism. **Table 1** below depicts a breakdown of activities within each of FPL's SPP programs and respective cost recovery mechanism (i.e., SPPCRC or Base Rates).

Florida Power & Light Company Cost Recovery Comparison - SPPCRC vs. Base Rates 2023-2032			
SPP Program	**SPP Activity**	**SPPCRC**	**Base Rates**
Distribution Lateral Hardening	Hardening laterals pursuant to criteria in approved SPP	X	
	Removing/retiring non-hardened assets		X
	Follow-up QA/QC inspection work	X	
Distribution Feeder Hardening	Hardening feeders pursuant to criteria in approved SPP	X	
	Removing/retiring non-hardened assets		X
	Installing automation devices in the former Gulf area	X	
	Follow-up QA/QC inspection work	X	
Transmission Hardening	Replacing wood structures with steel or concrete	X	
	Removing/retiring wood structures		X
	Follow-up QA/QC inspection work	X	
Distribution Vegetation Management	Conducting system-wide VM of feeders	X	
	Performing targeted VM of feeders	X	
	Conducting system-wide VM of laterals	X	
	Executing VM-related visual surveillance, customer trim requests, debris removal, support, and restoration	X	
	Follow-up QA/QC inspection work	X	
Transmission Vegetation Management	Conducting system-wide VM, including ROW	X	
	Performing targeted VM work based on field assessment	X	
	Documenting VM inspection results and findings, and executing NERC workplan (circuits 200 kV or higher)	X	
	Documenting VM inspection results and findings, and executing FPL workplan (circuits less than 200 kV)	X	
	Executing VM-related visual surveillance, customer trim requests, debris removal, support, and restoration	X	
	Follow-up QA/QC inspection work	X	
Distribution Inspection Program	Conducting groundline inspections on wood poles and visual inspections on concrete poles	X	
	Removing/retiring non-hardened assets (including pole pulls)		X
	Replacing distribution poles (wood/non-wood) failing inspection	X	
	Performing transfers*	X	
	Follow-up QA/QC inspection work	X	
Transmission Inspection Program	Conducting wood pole groundline inspections	X	
	Removing/retiring non-hardened assets		X
	Above-ground wood/concrete/steel inspections	X	
	Replacing trans structures (wood/non-wood) failing inspection	X	
	Ground patrol wood/concrete/steel inspections		X
	Follow-up QA/QC inspection work	X	
Substation Storm Surge/ Flood Mitigation	Hardening transmission/distribution substations	X	
	Removing/retiring non-hardened assets		X
	Follow-up QA/QC inspection work	X	

*For transfers, it is approximately 50 percent SPPCRC and 50 percent cost of removal is in base rates.

Table 1 *Source: FPL's 2023-2032 SPP filing*

C. SPP Governance

As a result of the merger and unification, former Gulf's systems were integrated into FPL's systems and processes used to plan, budget, and implement its SPP programs. The planning and budget process used for the consolidated FPL SPP programs is the same one used by the Company for the development and approval of all its O&M and capital expenditures budgets, including for non-SPP projects.

1. SPP Management Oversight

FPL manages its SPP projects at the program level in order to maximize efficiency while still achieving the overall objectives of the SPP programs. Most SPP team leaders are Six Sigma professionals with high-level training and have actual practice in increasing project effectiveness and efficiencies to lower costs passed on to customers. Six Sigma is a set of methodologies and tools used to solve process problems and improve existing programs. The six steps of Six Sigma are Define, Measure, Analyze, Improve, Control, and Verify.

To ensure that FPL's storm protection initiatives are both forward-looking and effectively executed, the Company established a three-year SPP program update team and a program implementation team. While the SPP program update team is responsible for budget preparation, strategic planning, regulatory compliance, and stakeholder coordination, the program implementation team is responsible for executing the SPP program projects. This includes managing day-to-day operations, coordinating with contractors, and ensuring that projects are completed on time. They also report financial performance to the program update team, based on actual spending and cost recovery. When unexpected challenges arise during project implementation, both teams work together to resolve them, ensuring that the projects stay on track and within budget. Coordination between the two teams involves regular communication which is essential for alignment. The program implementation team provides feedback on the feasibility and performance of the projects, which the program update team uses to adjust future plans and budgets.

Oversight of the SPP programs is also included in the Company's overarching multi-tiered approach to improve day-to-day reliability and resiliency during extreme weather:

- Planning and Budgeting
- Operating Performance Review
- Corporate Strategy

FPL includes all of its SPP programs as part of the Company's annual Planning and Budgeting process, which are ultimately reviewed and approved by the Budget Review Committee (which includes Executive Management) and the Board of Directors. The review process is comprised of multiple formal meetings throughout the calendar year with the Power Delivery business units and corporate executive management.

The Operating Performance Review process involves reviewing prior month actuals, the remaining year forecast, and variances/outliers for transmission and distribution. This is reviewed with the Operating Committee (Executive Management), which is comprised of multiple formal monthly

meetings with the Power Delivery leadership team and corporate executive management. Year-end actuals are also reviewed in January of the subsequent year with Corporate.

The Corporate Strategy process evaluates opportunities to improve the SPP program (incorporating lessons learned from storms) in addition to any plans and modifications for transmission and distribution. Modifications are reviewed and approved by the Operating Committee (Executive Management), which is comprised of multiple formal meetings throughout the calendar year with the Power Delivery leadership team and corporate executive level.

2. Internal/External Audits and Assessments

An internal audit of FPL's SPP Distribution Lateral Hardening (DLH) Program was completed in January 2025 to evaluate the processes and controls surrounding the program's expenditures. The scope included an assessment of the controls in place for management to properly monitor expenditures associated with DLH work, a review of contract administration of payments, and an analysis of the Company's Work Management System (WMS) data for trends or job overages. The audit resulted in no findings, but WMS process improvements were recommended.

FPL also provided quarterly internal corporate strategy reports on the oversight of SPP transmission and distribution hardening, two external Southeastern Electric Reliability Corporation (SERC) Compliance Audit Exit Presentations, and an external Risk Management Assessment of FPL's Vegetation Management and Pole Inspection programs.

The corporate strategy reports provide an overview of SPP programs including timelines, benefits, efficiencies gained, lessons learned, and key deliverables. Examples include lowering construction man-hours by using more efficient layouts, using less cable and transformers by combining single laterals into one project, and keeping contractor labor rates flat by reducing mobilization and demobilization costs.

The SERC compliance audits were conducted on FPL's Transmission Vegetation Management Program in 2020 for legacy FPL and in 2023 for consolidated FPL. The 2020 audit commended FPL's Systems Operator and the QA/QC process used in accordance with the Company's Transmission Vegetation Maintenance Plan. The 2023 audit included one recommendation for FPL to update its Vegetation Program Manual, which FPL has since corrected.

The Risk Assessment conducted in 2024 found that both FPL's Distribution and Transmission Vegetation Management and Pole Inspection programs to be well managed, with one suggestion for FPL to consider including in its pole inspection reports an assessment to determine if a pole can be climbed safely.

3. Contractor Procurement

FPL's actual and estimated SPP work to be completed are based on competitive solicitations and other contractor and supplier negotiations to ensure that FPL selects the best qualified contractors and equipment suppliers at the lowest evaluated costs. The bidding process allows the Company to validate that the contractor pricing offered for services is competitive, reasonable, and provides value for FPL and its customers. Long-term contracts with multiple manufacturers help secure more inventory at lower average costs.

Upon the receipt of proposals, FPL evaluates and selects contractors upon completion of a commercial (e.g., pricing and financial viability) and technical (e.g., expertise and resources) evaluation. Contracts range up to three years in duration to provide price stability. FPL looks for opportunities to renegotiate contracts, if available and appropriate.

While contractors also perform work on projects outside of SPP, FPL has implemented a comprehensive tracking and reporting system (i.e., work breakdown structure or WBS) to eliminate the potential for double recovery in both the Storm Protection Plan Cost Recovery Clause (SPPCRC) and base rates. Separate FERC subaccounts, as required by Rule 25-6.031(5), F.A.C., are maintained to record and track capital expenditures, accumulated depreciation, depreciation expense, and O&M expenses for SPP-related costs. The Company has also created unique repository or master data in its System Applications and Process (SAP) financial accounting system that captures key SPP project components including work order types, work breakdown structures, schedules, and costs.

Any approved work for which a contractor has not provided appropriate and correct invoices within 30 days after completion of work, or re-submitted within three days, may no longer be subject to reimbursement. Additionally, if the contractor has not demonstrated due care in ensuring accuracy of as-built reporting and quality workmanship, FPL reserves the right to withhold invoice payment. The Company may also withhold any retainage until all as-built drawings and a revised bill of materials are received.

FPL does not have a specific procedure related to the timing of contractor invoices to fully reconcile and close out a project. Rather, the contractor agreements include FPL's supplemental terms and conditions that include a section related to contractor obligations for invoicing. These terms dictate the timing of invoice submission after the completion of work. However, due to the size and complexity of some projects, potential exceptions to these timeframes are managed on an individual basis. FPL states it processes invoices pursuant to its contractor invoicing procedures and that it has not experienced any backlog of SPP project invoices as contractors have been paid promptly.

If embedded or non-embedded contractors are mobilized for storm recovery and restoration, FPL has built-in provisions in contracts for applicable rates to be in effect for recovery through a separate non-SPP Commission Storm (Hurricane) Restoration Cost Recovery proceeding.

Each contractor is provided specifications related to performance and expectations as part of their statement of work. SPP program managers hold periodic meetings to validate that projects and associated costs are aligned with the Commission-approved SPP program and goals. Project estimates are compared against actual costs and changes that occur throughout the construction process, as well as estimated project deadlines. Both primary contractor and third-party support costs are reviewed monthly, and concerns are discussed on an as needed basis between the SPP program owners and FPL's Integrated Supply Chain. Contractor safety performance is reviewed periodically with SPP program owners and Power Delivery leadership. Project schedules are also compared with estimated completion timeframes, and variance reasons are discussed. Poor performance or quality issues may result in re-assignment of specific crews and potential

termination of agreement with the contracting Company. To date, no contractors have been terminated or reprimanded for poor performance.

FPL also requires its contractors to have a QA program in place along with documented QC procedures. Additionally, to help lower the cost of providing service, FPL feels it is imperative that suppliers participate in cost savings measures such as providing accurate reporting and quality workmanship. Suppliers must also submit process improvements, which then become the intellectual property of FPL.

4. Inventory Tracking

To account for supporting materials/inventories used specifically for SPP programs, the Company's work breakdown structure captures materials purchased for SPP. Materials are stored in inventory until individual work requests are ready for construction. Once requested, the material is assigned a unique SPP Work Breakdown Structure (WBS) and delivered to crews at applicable work locations. The WBS divides each SPP project into distinct manageable tasks, and captures associated SPP capital costs and O&M expenses.

FPL's material, equipment, and labor are more centrally located. This allows both material and labor to be more efficiently dispatched and allocated to a specific project area to complete all the laterals on that feeder as opposed to being relocated to a different region or management area after completing an individual lateral project.

D. SPP Goal-Setting Framework and Forensic Storm Analysis

FPL has not undertaken an evaluation or analysis of the "cost-effectiveness" of its Commission-approved SPP programs and projects because neither Section 366.96, F.S., nor Rule 25-6.030, F.A.C., explicitly requires such evaluation or analysis. Instead, the Company evaluates its SPP programs and projects pursuant to Section 366.96, F.S., and Rule 25.6030, F.A.C. FPL has developed goals for all of its SPP programs. As required by Rule 25-6.030(3)(2), F.A.C., the Company provided the estimated annual number and costs of projects under each specific SPP program. The Company uses these two key performance indicators to assess implementation effectiveness and efficiency of completed projects.

FPL's goal-setting framework to measure progress toward meeting program project schedules and budgets is the Company's annual SPPCRC true-up cost filing and annual SPP status report. The Commission, through its annual SPPCRC proceeding, conducts a prudence review of FPL's transmission and distribution SPP costs to determine the recoverability of those costs. The review includes an analysis of the actual performance indicators at a SPP project level and the annual status report data which details those metrics on an overall program level. Commission audit staff's analysis of FPL's estimated and actual number of completed projects and associated costs for 2020 through 2023 is provided in each of the eight SPP program chapters.

FPL performs a Forensic Storm Analysis for named storms by deploying forensic patrollers to conduct and develop observations and findings, using Light Detection and Ranging (LiDAR) to compare post- to pre-storm scans, and using drones to determine storm impact. This analysis

determines whether previously Commission-approved SPP programs have provided increased transmission and distribution infrastructure resiliency, reduced restoration time, and reduced restoration cost when FPL is impacted by extreme weather events. FPL's annual prioritization criteria for its SPP projects are based on the impacts and lessons learned from these storms.

Table 2 shows the impacts of two tropical storms and four hurricanes since inception of the SPP program in 2020 compared to a pre-hardened system impacted by Hurricane Wilma in 2005. In relation to the number of FPL customers impacted, the most comparable storm to Hurricane Wilma is Hurricane Ian which occurred in 2022. Wilma impacted 3.2 million customers, 45 percent more than 2.2 million impacted by Ian. It took FPL up to five days to restore service to 50 percent of Wilma-impacted customers and 18 days to reach 100 percent restoration. Customer outages averaged 5.4 days. Compared to Ian, 50 percent of impacted customers were restored within one day and 100 percent were restored by eight days. Customer outages averaged 1.5 days. Infrastructure failures caused by Hurricane Wilma included 12,400 distribution poles and 100 transmission structures. Substations were restored in five days. During Hurricane Ian, 3,200 distribution poles failed (74 percent less than Wilma), without any failure to transmission structures. Substations were restored in one day.

Upon examination of the five remaining storms shown in **Table 2,** it took FPL two days to restore service to 50 percent of customers and three days for all of the customers impacted. Customer outages averaged less than a day. No transmission structures failed during any of the five storms, and the highest number of distribution pole failures was 171 during Hurricane Idalia. The maximum restoration time to restore substations was one day after Tropical Storm Elsa.

Florida Power & Light Company Forensic Storm Analysis Comparison 2005-2023							
Categories	**HURCN Wilma**	**HURCN Isaias**	**Trop Strm Eta**	**Trop Strm Elsa**	**HURCN Ian**	**HURCN Nicole**	**HURCN Idalia**
Storm Season	2005	2020	2020	2021	2022	2022	2023
Saffir-Simpson Scale	Cat 3	Cat 1	Tropical Storm	Tropical Storm	Cat 4	Cat 1	Cat 3
Landfall Max Sustained Winds	120 mph	85 mph	45 mph	63 mph	150 mph	75 mph	125 mph
Customers Affected	3.2 mil.	0.04 mil.	0.4 mil.	0.09 mil.	2.2 mil.	0.5 mil.	0.2 mil.
FPL Counties Impacted	21	28	27	28	32	30	37
AFS Interruptions Avoided	N/A	18,000	139,500	46,000	404,000	152,000	69,000
Substations Flooded	0	0	0	0	6	0	0
Substations De-energized	241	0	0	1	27	2	7
Trans Structures Failed	100	0	0	0	0	0	0
Trans Line Sections Impacted	345	1	4	1	70	15	13
Distribution Poles Replaced	12,400	2	19	8	3,200	30	171
Lateral Performance (UG vs OH)	N/A	5.6x	7.5x	7.6x	5.6x	15.5x	13.6x
Substation Restoration Time	5 days	0 days	0 days	1 day	1 day	0 days	0 days
50% of customers restored	5 days	2 days	Double Landfall	1 day	1 day	1 day	1 day
100% of customers restored	18 days	3 days	Double Landfall	1 day	8 days	1 day	2 days
Average Customer Outage	5.4 days	0.06 days	0.1 days	0.06 days	1.5 days	0.2 days	0.13 days

Table 2 *Source: FPL's Response to Commission Audit Staff's DR 3.5*

E. SPP Project Variances

Project schedules and completion dates may change based on the actual circumstances and conditions encountered or required for a specific work site to ensure that resources are being efficiently used. FPL attempts to mitigate the impacts of any variance in the schedule and costs to the greatest extent practicable by either accelerating or delaying projects to ensure the SPP program meets its overall objectives. These actions help keep the program on track and within budget, despite the various challenges that arise in individual projects.

Projects may be accelerated to maintain overall program objectives when other projects face delays. If other projects are completed at lower costs, the subsequent projects are accelerated to ensure resource efficiency. Project acceleration may also be prompted based on unanticipated availability of permits, engineering estimates, materials, third-party resources and restrictions (e.g., limited work times), and favorable field conditions and construction alignment.

On the contrary, projects may be delayed. Obtaining and limitations of land use permits and property easements present challenges. Constraints imposed by permitting agencies may require work along high traffic roadways to be performed overnight to minimize public safety risks. The challenges associated with obtaining easements are allowing access to public or private land for SPP project construction. To mitigate permitting issues, FPL works with third-parties and public works departments. To resolve easement issues, the Company requires contractors to perform all project work within right-of-ways, or within pre-approved FPL easements shared with other utilities.

Extreme weather conditions may cause resources on SPP projects to be reassigned to restoration services or provide mutual assistance to other utilities. An unanticipated condition on a jobsite such as projects adjacent to environmentally sensitive areas or in higher density locations may impede the ability to complete a scheduled project in that location. Increase in cost of materials and contract labor, supply chain constraints, and resource availability also impact project schedule completion.

Although variances can occur at any time during a project, every project has a projected timeline, cost, and identified project elements that must be closely monitored. FPL's program owners continuously monitor, identify, and remedy unanticipated issues and delays with projects through detailed monthly budget meetings, Corporate Strategy process, and Budget Review Committee assessments.

Commission audit staff examined completed projects for the distribution lateral and feeder hardening, transmission hardening, and substation flood mitigation programs to determine the primary drivers causing estimated costs to vary from actual costs. FPL provided explanations for all project cost variances that exceeded plus or minus $50,000 and 10 percent. Analysis of the variances are discussed in each of the respective program chapters.

F. SPP Program Improvements

Distribution Lateral Hardening

FPL's loop design and construction of underground power lines at the feeder level significantly improves the efficiency and timing of construction because all the work can take place in the same location on a set of laterals as opposed to being spread out over multiple individual laterals across FPL's entire service area. Material, equipment, and labor are more centrally located as opposed to having to be relocated to a different region or management area after completing an individual lateral project. Undergrounding at the feeder level also streamlines the Company's engineering and permitting processes. Engineers can design a "master plan" for an entire area or neighborhood rather than having to create separate designs for individual laterals. The volume of permits needed is also lowered, thus reducing the burden on the local permitting agencies.

FPL is placing more underground power lines in public or other existing rights of way to reduce the number of easement approvals required by customers. This reduces the complexity of the customer outreach process and reduces construction time.

Minimally invasive directional boring is used whenever possible as opposed to other construction methods, such as open trenching which results in less impact to customer property and reduces construction time. FPL procured Ground Penetrating Radar (GPR) for use by construction crews to identify underground facilities before directional boring. This eliminates down time, mitigates potential damage to other buried facilities, and increases the overall safety of the project.

The Company employs a virtual augmented reality application in the field, allowing FPL to better illustrate to customers where the facilities will be installed, and promoting timely responses to customer questions and concerns. Where practicable, FPL attempts to relocate existing facilities from the rear to the front of customers' premises. This helps to improve accessibility to facilities, which reduces the need to enter customers' property and further reduces restoration times associated with extreme weather conditions.

As part of the underground conversion process, FPL also installs meter base adaptors that allow underground service to be provided to the customer by utilizing the existing meter and meter enclosure. The meter base adaptors minimize the impact on customer-owned equipment and facilities. For example, in certain situations, overhead to underground conversions of electric service can trigger a local electrical code requirement that necessitates a customer upgrade of the home's electric service panel. This can cost the customer thousands of dollars. However, by utilizing a meter base adaptor, overall costs are reduced, and customers can avoid the need and expense to convert their electrical service panels.

Distribution Feeder Hardening

FPL hardened all of its critical infrastructure (CI) feeders (i.e., feeders that serve hospitals, 911 centers, police and fire stations, water treatment facilities, and county emergency operation centers) and Community Project feeders (i.e., feeders that serve other key community needs like gas stations, grocery stores, and pharmacies) in the legacy FPL service area. FPL continues to harden critical infrastructure feeders in the former Gulf service area. FPL's Distribution

Inspection Program was also reorganized under the Distribution Feeder Hardening Program management team to improve work coordination and communication between the programs. As of year-end 2023, FPL has either overhead or underground hardened approximately 76 percent of all its feeders.

When a feeder is hardened at the same time its adjoining laterals are being hardened, the lateral and feeder hardening teams will undertake a cross-team project review to determine overlap of work and take advantage of efficiencies. Both leaders of the lateral and feeder hardening programs report to the Sr. Director of Central Maintenance and Construction. This coordination further extends to attendance of staff meetings by both of the SPP program owners and the Sr. Director, as well as weekly safety calls under the same organization, which further strengthens the relationship between the program owners and their respective teams.

Transmission Hardening

FPL has hardened all of its wooden transmission structures (including poles) in its legacy service area and plans to complete the conversion of all remaining structures in its Northwest Region (former Gulf service area) by year-end 2033.

Distribution Vegetation Management

A modification to the Distribution Vegetation Management Program in FPL's 2023 SPP is the use of advanced predictive analytics to further reduce vegetation-related outages during extreme weather events. Examples include satellite imagery, and ground-based LiDAR imaging to precisely identify vegetation that's encroaching on power lines. The use of predictive analytics has the potential benefit of further reducing vegetation-related outages during extreme weather events.

FPL converted former Gulf's four-year trim cycle for the distribution laterals to match FPL's six-year cycle. A six-year lateral trim cycle necessitates more aggressive trimming than required for a four-year trimming cycle. This results in a preventative maintenance trim specification that can last for an average of six years.

FPL will be shifting feeder maintenance to a prescriptive, unit-based assignment program. Historically, an hourly rate cost structure was applied to feeders. However, by implementing a cost per mile maintenance pricing for feeders in an assigned work plan for any given year, more certainty between expected costs versus hourly costs are discernable.

Transmission Vegetation Management

FPL recently instituted an Automated Clearance Report that generates real-time email alerts with information that vegetation is encroaching upon the Vegetation Action Threshold (VAT). Receiving these alerts allow FPL to take swift and responsive action mitigating potential outages.

Distribution Inspection

FPL performs loading assessments on all distribution poles which includes field measurements, span length, attachment heights (including third-party attachments), and wire sizes based on the Company's construction standards. If a pole does not meet National Electric Safety Code (NESC) requirements, FPL either reinforces, replaces, or relocates the attachments. Consistent with the Commission's strength impact/load assessment requirements on poles with attachments,

any pole having less than 80 percent of full load at the prior eight-year inspection cycle will continue to be exempt from the loading assessment during the next eight-year inspection cycle, and chromium copper arsenate poles will only be excavated if they are older than 28 years. FPL notes that, in addition, it conducts annual testing on one percent of the exempted poles to ensure existing safety standards and storm hardening programs are not compromised.

Transmission Inspection

FPL leverages technology to share transmission inspection data with other SPP program managers. For example, the Transmission Inspection Program team uses drones equipped with cameras and sensors, such as LiDAR, to identify vegetation that may be encroaching the transmission lines. The sharing of this data with the Transmission Vegetation Management Program manager facilitates prioritization of work and leads to improved operational efficiencies.

Substation Storm Surge/Flood Mitigation

FPL's substation hardening projects include the implementation of various mitigation measures to reduce outages and restoration costs. Such measures include raising equipment above flood level, installing flood monitors, constructing flood mitigation walls, installing flood gates, improving drainage, and rebuilding substations when warranted. Since completion of the St. Augustine substation rebuild SPP project in 2023, FPL has reduced the risk of future damage to the St. Augustine substation due to storm surge/flooding, thereby avoiding substation outages. For example, this substation was not impacted by Hurricane Debby in the 2024 storm season.

III. Distribution Lateral Hardening Program

A. Program Initiatives

The configuration of a typical overhead electrical distribution system is depicted in **Figure 2**. The distribution substation acts as a central point where high-voltage electricity from transmission lines is reduced to a lower voltage suitable for distribution. The distribution substation is connected to a main feeder (trunk) that carries the reduced voltage electricity to smaller transformers located near individual homes or businesses. Branching from the main feeder are primary laterals that distribute power from the feeder to specific areas or neighborhoods. This connection point is protected by a fuse to isolate faults on the primary lateral from affecting the main feeder line. The final stage in the delivery of electricity is over the service line connected between the distribution transformer and customer premises.

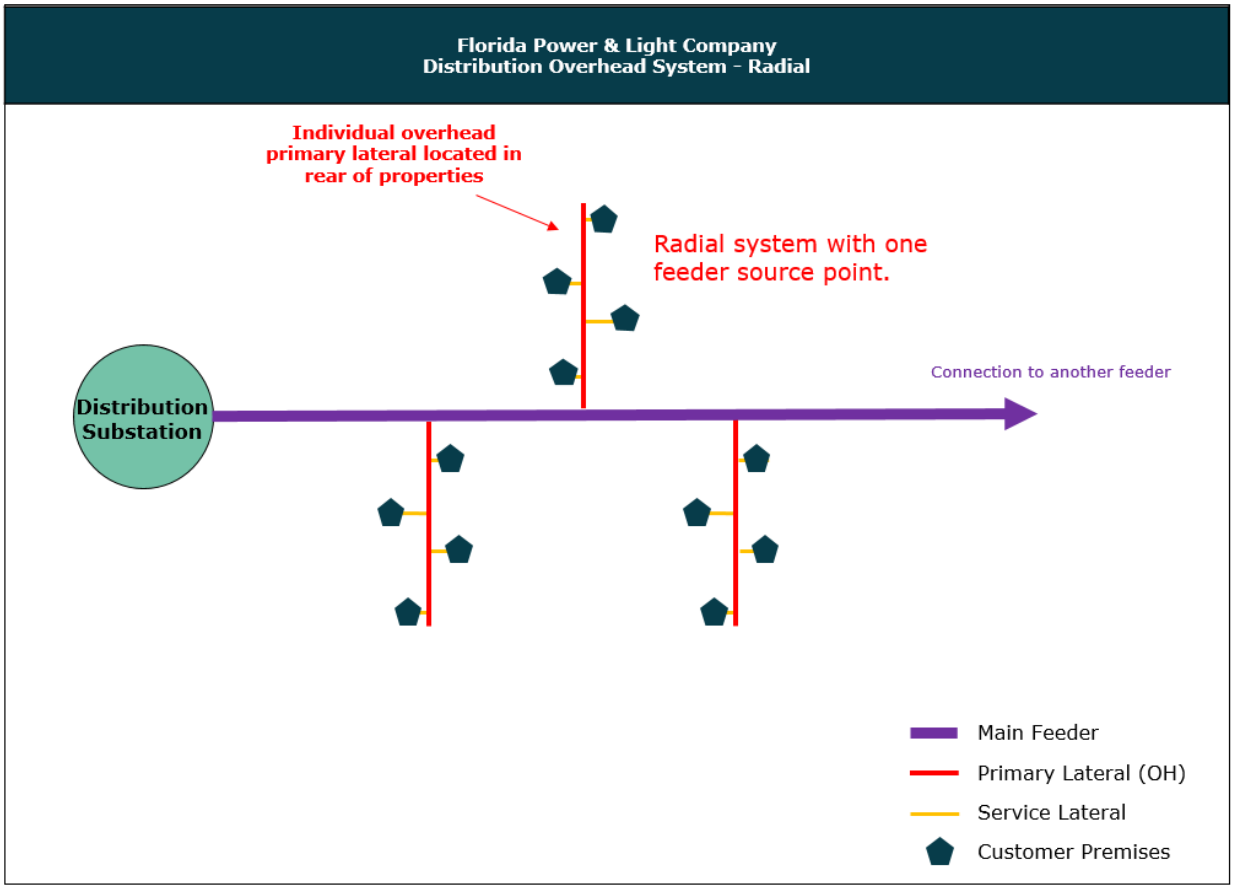

Figure 2

Source: Interview with FPL SPP Management

The Company's Distribution Lateral Hardening (DLH) Program targets certain overhead primary laterals that were impacted by recent storms and have a history of vegetation-related outages and other reliability issues for conversion from overhead to underground. Implementation of the DLH program is intended to benefit the Company and its customers by reducing:

- Number/severity of customer outages
- Number of customer complaints
- Amount of system damage
- Restoration resources and costs

B. Prioritization Methodology

During the DLH pilot program in 2018, FPL tested undergrounding using two different configurations: a radial system and a loop system. A radial system is fused to the source feeder only on one end of the primary lateral for a group of customers and if a fault occurs, the entire lines loses power. A loop system involves two fully separate fused connections to a source feeder. Hence, if one section of the loop fails, power can still be supplied to customers from the other direction. The loop system is more expensive than the radial system because more distribution equipment and facilities (e.g., switches and conductors) are required; however, the added redundancy contributes to a more stable and reliable power supply. While weighing the benefits of redundancy and reliability of a loop system against the simplicity and cost-effectiveness of a radial system, FPL found it to be more beneficial and efficient to use the loop system rather than undergrounding individual laterals via a radial system. According to FPL, the Company officially transitioned to the loop system beginning with its Commission-approved 2023-2032 SPP program.

Figure 3 shows a graphical representation of the initial DLH single primary lateral-approach system project. As shown, this methodology targets "specific laterals" rather than "multiple laterals" downstream from the main feeder. Individual overhead laterals to be converted to an underground loop system were prioritized based on a history of outages or high vulnerability to weather events, like those in heavily wooded areas or with problematic overhead lines. As previously mentioned, any disruption occurring using an overhead radial system will result in loss of power for the entire line and corresponding customers.

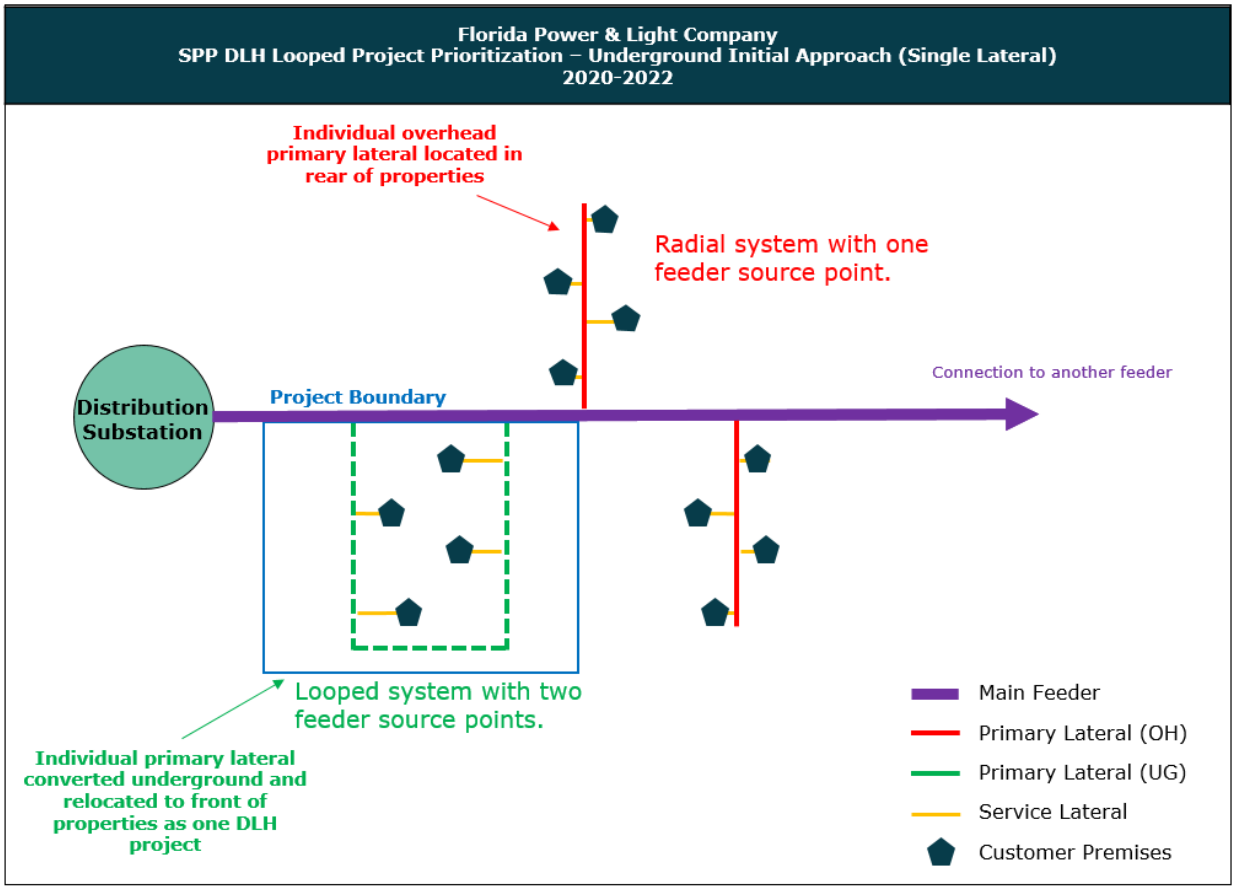

Figure 3 *Source: Interview with FPL SPP Management*

Figure 4 shows a graphical representation of DLH using the current feeder-approach looped system, which is the process of undergrounding all laterals fed from the main feeder. The selection and prioritization of the laterals to be looped is based on a methodology that considers: (a) all of the overhead laterals on each feeder; (b) outage experience during recent major hurricanes; (c) the number of vegetation-related outages experienced over the most recent 10 years; and (d) the total number of lateral and transformer outages experienced over the most recent 10 years. All laterals on the feeders will then be hardened according to the ranking of each feeder. Importantly, continuing this approach to ranking each feeder will ensure that the worst-performing circuits are addressed first, before moving crews to the next ranked feeder.

Starting in 2025, FPL implemented an additional selection methodology to its current prioritization of laterals based on feeder performance. Under this new methodology, the DLH program will target and prioritize specific Management Regions throughout the consolidated FPL service area based on areas of highest risk of hurricane impacts, highest concentration of customers, and areas that would require significant transit for out of state crews during an extreme weather restoration event. This Management Region approach to prioritization will capitalize on the lessons learned from the underground pilots by further improving efficiency and timing of lateral hardening projects in areas that present the highest risk of hurricane impacts.

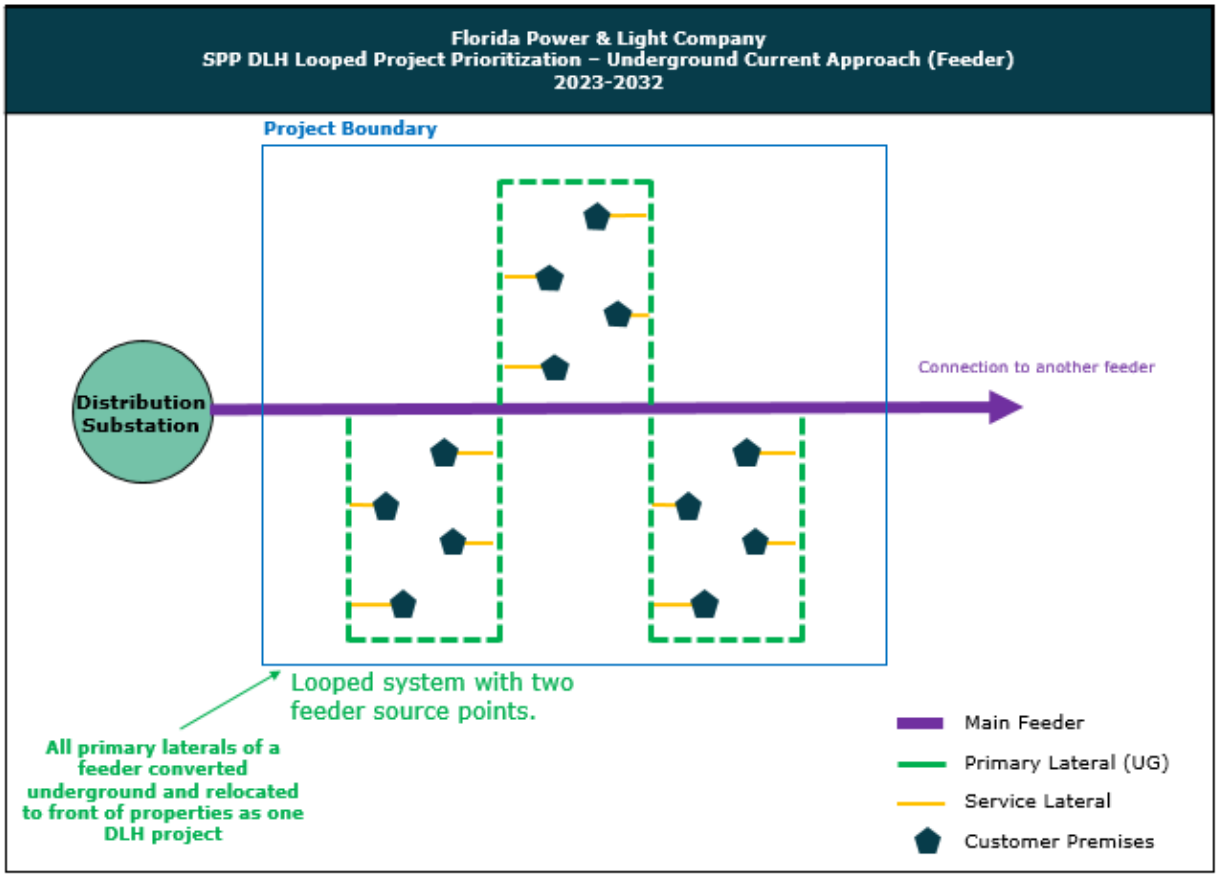

Figure 4 *Source: Interview with FPL SPP Management*

The design and construction of a loop system is at the feeder level which significantly improves the efficiency and timing of construction because all of the work takes place in the same location (as opposed to being spread out over multiple individual laterals across FPL's entire service area). Material, equipment, and labor are more centrally located, allowing for both to be more efficiently dispatched and allocated to a specific project area to complete all the laterals on that feeder. The permitting process is streamlined by lowering the volume of permits needed and reducing the burden on the local permitting agencies and customer and community outreach efforts are optimized by allowing FPL to hold meetings for an entire neighborhood. This is in contrast with the individual lateral-approach where one block of a neighborhood at a time may be converted, creating more questions from the customers about why one street was selected but not another.

While FPL does not separately track the number of overhead distribution laterals that were hardened overhead versus those that were placed underground, the Company has established protocols for evaluating when a lateral may be overhead hardened as opposed to being placed underground. The protocols for consideration include vegetation-related outages experienced, conditions observed in the field that make undergrounding technically difficult, lack of critical infrastructure customers served by the lateral, inability to obtain easements, space restrictions, and number of customers served by the lateral. If one or more of these factors are present, FPL will make a determination whether the lateral should be overhead hardened or placed

underground based on the conditions at the time. On average, there are approximately 20-30 overhead laterals connected to a feeder.

A typical DLH project may take two to four years to complete from beginning to end, depending on a variety of factors. Scope of project activities are worked concurrently to optimize the project schedule. For example, agencies may withhold the issuance of permits which would cause a portion of the project to be delayed until permits are approved. In the event a project permit is delayed, a different project activity may be accelerated to utilize the available resources.

C. Management Oversight

The DLH program has dedicated QA/QC inspectors assigned to the following FPL regions: Miami-Dade and Broward, North and East, and the West. QA/QC inspectors alternate inspecting projects in assigned regions and the Northwest Region. QA/QC inspectors are responsible for assessing and reporting deviations on all associated work requests for a lateral hardening project. A QA/QC form is completed at each individual work location, with recommended corrective measures, if any. FPL receives a report comprised of completed QA/QC forms, which include detailed comments and photos of work deviations that are subsequently shared with the vendor that performed the work. After the vendor corrects all identified issues, the QA/QC inspector performs a follow-up assessment. If no additional deviations are found in the reinspection, the respective work request may proceed to the close-out process. If additional deviations are found, the QA/QC inspector will continue to assess and report on all findings until the vendor has addressed all issues.

The Distribution Lateral Hardening QA/QC inspections are performed upon project completion prior to work request job close-out. These final QA/QC inspections are in addition to the normal construction oversight performed throughout the project. Each QA/QC inspector is assigned incremental sets of five lateral hardening projects to evaluate at a time.

FPL's QA/QC process is also part of the Sarbanes-Oxley as-built process. This process is to provide the necessary internal controls to closely monitor construction projects, minimize cost overrun risks, and enhance operating efficiencies with best practices. The costs for the QA/QC inspections are recovered through the SPPCRC.

D. Analysis of Projects and Costs

As of year-end 2023, FPL has approximately 203,808 distribution laterals (53,196 miles) in the legacy FPL service area and 30,552 laterals (6,174 miles to exclude the 850 miles of laterals reclassified as feeders) in the former Gulf service area. Since the inception of the SPP, FPL has hardened 2,103 laterals (909 miles), which represents three percent of the prioritized underground laterals in its consolidated service area.

The DLH SPP program total costs reported in the following tables are the aggregate of SPPCRC and base rate costs. The base rate costs are for the SPP activities associated with removing and

retiring non-hardened assets. Commission audit staff notes that there are non-SPP activities associated with lateral hardening that are recovered through base rates. These activities include new construction and storm restoration.

Tables 3 and 4 capture the SPP DLH program projects and costs based on Commission audit staff's review of FPL's annual SPPCRC filings and SPP annual status reports. The annual costs include actual and/or estimated costs for all activities performed in the SPP program in a specific year. The program activities include hardening projects initiated, in various stages of construction, or completed and closed out.

Florida Power & Light Company SPP Distribution Lateral Hardening Program Pre-Merger Projects and Costs 2020–2021					
Service Area	**Projects Completed**	**Miles Planned**	**Miles Completed**	**Est. Cost ($M)**	**Actual Cost ($M)**
2020					
Legacy FPL	216	N/A	91.3	$120.4	$129.3
Former Gulf	0	N/A	0	$0.0	$0.0
2021					
Legacy FPL	440	N/A	141.9	$212.5	$245.6
Former Gulf	1	N/A	2.1	$5.2	$2.5
Total 2020-2021					
Legacy FPL	**656**	**N/A**	**233.2**	**$332.9**	**$374.9**
Former Gulf	**1**	**N/A**	**2.1**	**$5.2**	**$2.5**

Table 3 *Source: FPSC 2021 and 2022 SPP Annual Status Reports, DRs 3.7, 3.27, and 4.6*

Table 4 shows the DLH program costs for 2022 and 2023, post-merger of FPL and Gulf. For the combined years, the Company completed an additional 1,447 projects, accounting for 673.7 miles. Total SPP costs were $895.6 million, less than half of one percent ($4.3 million) over the estimated costs of $891.3 million.

As of year-end 2023, FPL has hardened, undergrounded, or built to the NESC's extreme wind loading construction standards approximately three percent of all laterals in the consolidated system through SPP.

Florida Power & Light Company SPP Distribution Lateral Hardening Program Post-Merger Projects and Costs 2022–2023					
Service Area	**Projects Completed**	**Miles Planned**	**Miles Completed**	**Est. Cost ($M)**	**Actual Cost ($M)**
2022					
Consolidated FPL	608	N/A	296.3	$368.2	$377.0
2023					
Consolidated FPL	839	N/A	377.4	$523.1	$518.6
Total 2022-2023					
Consolidated FPL	**1,447**	**N/A**	**673.7**	**$891.3**	**$895.6**

Table 4 *Source: FPSC 2023 and 2024 SPP Annual Status Reports, FPL's Response to DR 4.4*

IV. Distribution Feeder Hardening Program

A. Program Initiatives

FPL's distribution feeders are the backbone of its distribution system and are an essential component in providing efficient, safe, and reliable electric service to customers. The Company's Distribution Feeder Hardening (DFH) program strengthens selected feeders to meet the NESC extreme wind loading standards. The program includes installing stronger poles, shortening the distance between poles, employing additional storm guying and bracing, undergrounding sections of feeders, and installing distribution automation devices in FPL's Northwest Region. Examples of distribution automation devices are supervisory control and data acquisition (SCADA) system-enabled voltage regulators, capacitor bank controllers, fault circuit indicators, and reclosers. These devices help increase operational efficiencies and mitigate the effects of feeder (and lateral) interruptions by isolating and restoring problems, clearing temporary faults, decreasing voltage sags, and expediting location of outage causes, etc.

In Gulf's 2020-2029 SPP, the distribution automation initiative was included as part of the DFH program and associated costs were recovered through the SPPCRC. In contrast, associated costs for distribution automation initiatives were recovered through base rates as part of FPL's 2020-2029 SPP.

In FPL's 2023-2032 SPP, the Company will continue the recovery of costs through the SPPCRC for any distribution automation initiatives implemented in the former Gulf service area.

As of year-end 2023, FPL has approximately 3,467 distribution feeders (19,048 miles) in the legacy FPL service area and 289 feeders (1,847 miles to include the 850 miles of laterals reclassified as feeders) in the former Gulf service area. Since the inception of the SPP, FPL has hardened 1,335 feeders (5,360 miles). As of year-end 2023, FPL has hardened 76 percent of feeders in its consolidated service area which includes feeders hardened prior to the inception of the SPP.

A typical DFH project may span across several years to complete from beginning to end. Scope changes, for example, may affect material availability and impact overall project costs. Constraints imposed by permitting agencies may require work along high traffic roadways to be performed overnight to minimize public safety risks. Associated tasks for a DFH project include four main components; engineering design, permitting, construction, and project close out.

B. Prioritization Methodology

FPL's prioritized feeder hardening focuses first on CI facilities (acute care facilities and hospitals, 911 centers, police and fire stations, water treatment facilities, etc.), community facilities (gas stations, grocery stores, pharmacies, etc.), and then interrupted facilities (feeders with the highest number of interruptions.) FPL has hardened all of its CI and community feeders

throughout its legacy service area. As of year-end 2023, FPL has 81 CI feeders that remain to be hardened in the Northwest Region (former Gulf service area).

FPL annually selects and prioritizes feeders through its Frequency Feeder Initiative to target feeders experiencing the highest number of interruptions and includes those on the three-percent worst performing feeder list.[3] This initiative is focused primarily on reliability by monitoring and controlling emergent risks. As such, the initiative is not a part of FPL's SPP, and the associated costs are recovered through base rates, not the SPPCRC. FPL does, however, compare the non-SPP feeders identified through the initiative with its existing SPP feeder projects to avoid duplication of hardening efforts.

To prioritize the remaining feeders to be hardened each year for the DFH program, FPL takes into account the feeder's historical reliability performance, restoration difficulties (e.g., environmentally sensitive areas, islands with no vehicle access, and river crossings), on-going or upcoming internal/external projects (e.g., FPL maintenance or system expansion projects, municipal overhead/underground conversion project, or municipal road project), and geographic location. At this time, FPL has not identified any areas where DFH would not be feasible, reasonable, or practical.

C. Management Oversight

The SPP DFH project owner is responsible for the scheduling, workflow planning, project execution, project tracking, cost control, budgets, and variances. Due to the scale and scope of the program, the owner has dedicated engineering and non-engineering personnel responsible for individual projects.

FPL leverages third-party auditors to perform QA/QC inspections on all completed feeder work. Generally, there is at least one QA/QC inspector assigned to each specific FPL region. QA/QC inspectors are responsible for assessing and reporting deviations on all associated work requests for a feeder hardening project. A QA/QC form is completed at each individual work location, with recommended corrective measures, if any. FPL receives a report comprised of completed QA/QC forms which include detailed comments and photos of work deviations that are subsequently shared with the vendor that performed the work.

After the vendor corrects all identified issues, the QA/QC inspector performs a follow-up assessment. If no additional deviations are found in the re-inspection, the respective work request may proceed to the close- out process. If additional deviations are found, the QA/QC inspector will continue to assess and report on all findings until the vendor has addressed all issues.

The DFH project QA/QC inspections are performed upon project completion prior to work request job close-out. These final QA/QC inspections are in addition to the normal construction oversight performed throughout the project. FPL states that its QA/QC inspections ensure feeder hardening projects are meeting the Company's expectations to construction standards and

[3]FPSC Rule 25-6.0455, F.A.C., requires each IOU to file data regarding its top three-percent worst performing feeders, i.e., those with the highest number of breaker interruptions.

workmanship, safety, and conformance with Sarbanes-Oxley. This results in overall improved system resiliency, reliability, and customer satisfaction. FPL also states that the QA/QC inspections with its embedded vendors provide an opportunity for feedback and training so repeat mistakes are minimized. The costs for the QA/QC inspections are recovered through the SPPCRC.

Poor performance or quality issues may result in re-assignment of specific crews and/or potential termination of agreement with the contracting Company. To date, FPL states that there have not been any such instances resulting in re-assignment or termination.

D. Analysis of Projects and Costs

Table 5 shows the number of completed DFH projects completed in 2020 and 2021 for the legacy FPL and former Gulf service areas and those completed in 2022 and 2023 after consolidation. A DFH project is assigned to a unique feeder and includes all line sections and poles associated to that feeder. The feeder may be constructed as overhead, underground, or a hybrid of both which is most common.

As reflected in **Table 5**, the majority of feeders are hybrids. Generally, only limited sections of feeders are put underground as part of the DFH program based on the actual conditions experienced at the specific project site, including:

- Double Circuit – FPL's Distribution Feeder Hardening Program standardizes the elimination of "double circuits" (two or more independent three-phase circuits on the same feeder pole) by undergrounding one of the two "double circuit" sections.

- Excessive conductor span lengths – In scenarios where the maximum allowable span lengths are exceeded, an undergrounding solution is considered.

- Crossings (highway, waterway, etc.) – Overhead feeder hardening is preferred for all accessible crossings, while underground feeder hardening is strongly considered for inaccessible crossings.

- Inaccessible areas – Where economically feasible, undergrounding is considered for inaccessible feeder locations that are generally out of reach or isolated and remote.

As of year-end 2023, approximately 76 percent of FPL's feeders were either overhead or underground hardened. The Company anticipates completing all of its hardening projects in the legacy FPL service area by the end of 2025, and those in its Northwest Region (former Gulf service area) the end of 2034. FPL does not specifically forecast overhead hardening versus undergrounding costs for its SPP feeder hardening as well as its lateral hardening program because an evaluation needs to be performed based on the existing conditions at the time of the project. Additionally, the Company's work management system does not summarize those costs by overhead versus underground on a project basis.

Florida Power & Light Company SPP Distribution Feeder Hardening Program Completed Projects by Type 2020–2023				
Service Area	Feeder Types			Percentage of Total Feeders Hardened
	Overhead	Underground	Hybrid	
2020				
Legacy FPL	6	18	278	57%
Former Gulf	0	0	0	0%
2021				
Legacy FPL	6	11	283	67%
Former Gulf	0	0	11	3%
2022				
Consolidated FPL	11	5	308	69%
2023				
Consolidated FPL	10	7	381	76%

Table 5 *Source: FPL's Response to Commission Audit Staff's DR 4.7*

The SPP DFH program total costs reported in **Tables 6 and 7** are the aggregate of SPPCRC and base rate costs. The base rate costs are for the SPP activities associated with removing and retiring non-hardened assets. Commission audit staff notes that there are non-SPP activities associated with feeder hardening that are recovered through base rates. These activities include new construction and storm restoration.

The tables capture the SPP DFH program projects and costs based on Commission audit staff's review of FPL's annual SPPCRC filings and SPP annual status reports. The annual costs include actual and/or estimated costs for all activities performed in the SPP program in a specific year. The program activities include hardening projects initiated, in various stages of construction, or completed and closed out.

As shown in **Table 6**, for the 2020 to 2021 period, legacy FPL completed 602 feeder hardening projects (2,437.6 miles) and Gulf completed 11 projects (103.9 miles). FPL's and Gulf's total costs over the two-year period were $1.4 billion and $55.5 million, respectively. It should be noted that Gulf was unable to complete any feeder hardening projects in 2020 due to resources being shifted to hurricane restoration.

Florida Power & Light Company SPP Distribution Feeder Hardening Program Pre-Merger Projects and Costs 2020–2021					
Service Area	**Projects Completed**	**Miles Planned**	**Miles Completed**	**Est. Cost ($M)**	**Actual Cost ($M)**
2020					
Legacy FPL	302	1,050	1,185.9	$628.1	$681.7
Former Gulf	0	22	21.6	$12.3	$16.1
2021					
Legacy FPL	300	1,390	1,251.7	$664.9	$675.2
Former Gulf	11	39	82.3	$35.9	$39.4
Total 2020-2021					
Legacy FPL	**602**	**2,440**	**2,437.6**	**$1,293.0**	**$1,356.9**
Former Gulf	**11**	**61**	**103.9**	**$48.2**	**$55.5**

Table 6 *Source: FPSC SPP Annual Status Reports, FPL's Responses to DRs 3.7, 3.27, and 4.6*

For the post-merger years of 2022 and 2023 shown in **Table 7**, FPL completed an additional 722 projects (2,819.1 miles). The total costs over the two-year period were $1.6 billion, 13 percent ($189.7 million) over the estimated cost of $1.4 billion. FPL experienced an increase in the costs of materials and supplies due to inflation and supply chain constraints that impacted the costs associated with many of the projects, including contractor labor. To help mitigate these impacts, the company's supply chain organization has negotiated long-term contracts with multiple manufacturers to secure more inventory at lower average costs.

Florida Power & Light Company SPP Distribution Feeder Hardening Program Post-Merger Projects and Costs 2022–2023					
Service Area	**Projects Completed**	**Miles Planned**	**Miles Completed**	**Est. Cost ($M)**	**Actual Cost ($M)**
2022					
Consolidated FPL	324	1,415	1,252.3	$728.1	$846.0
2023					
Consolidated FPL	398	1,200	1,566.8	$689.0	$760.8
Total 2022-2023					
Consolidated FPL	**722**	**2,615**	**2,819.1**	**$1,417.1**	**$1,606.8**

Table 7 *Source: FPSC SPP Annual Status Reports and FPL's Responses to DRs 3.7, 3.27, and 4.6*

V. Transmission Hardening Program

A. Program Initiatives

FPL's SPP Transmission Hardening Program consists of proactively replacing all of the Company's wooden transmission structures (including poles) with higher strength steel or concrete to ensure compliance with current NESC extreme wind loading criteria. The Company has over 83,000 transmission structures comprising approximately 10,000 miles. FPL has hardened all of the structures in its legacy service area and plans to complete the conversion of approximately 3,050 structures in its Northwest Region (former Gulf service area) by year-end 2033.

B. Prioritization Methodology

The annual prioritization/selection criteria for the wood structures to be replaced includes proximity to high wind areas, system importance, customer counts, and coordination with other storm initiatives. Other economic efficiencies, such as opportunities to perform work on multiple transmission line sections within the same transmission corridor, are also considered. Efficiency gains also come from the coordination with the Company's transmission inspections. If a wooden transmission structure fails an inspection, FPL designates it for replacement with steel or concrete. At this time, the Company has not identified any areas where replacement of the existing wood transmission structures would not be feasible, reasonable, or practical under the Transmission Hardening Program.

C. Management Oversight

FPL has a QA/QC inspection process to ensure that its Transmission Hardening Program project work is in compliance with safety and construction standards, and conformity with Sarbanes-Oxley. The process also provides an opportunity for feedback and training so repeat mistakes are minimized. The costs for the QA/QC inspections are recovered through the SPPCRC.

For each Transmission Hardening Program project, FPL assigns a Company representative to oversee the construction work. While working with the foreman, the representative ensures that construction is in compliance with the design drawings, structure list, purchase order contracts and terms, and the Company's transmission installation standards. The construction drawing includes specific instructions for each work location. After working each individual location, the foreman signs and dates the construction drawing and notes any scope changes. The representative also performs a QA/QC inspection during work at each location, addresses and resolves any identified issues, and also signs and dates the construction drawing. An independent third-party vendor conducts quarterly audits of transmission hardening as-built construction drawings and the work order close-out process.

D. Analysis of Projects and Costs

Total costs reported shown in **Tables 8 and 9** are the aggregate of SPPCRC and base rate costs. The SPP base rate costs are for the removal and retirement of non-hardened assets. Commission audit staff notes that there are non-SPP activities associated with hardening transmission structures that are recovered through base rates. These activities include new construction, daily work (e.g., maintenance, pole line extensions, relocation projects), and storm restoration. Additionally, existing structures in FPL's consolidated service area that currently meet the NESC's extreme wind loading criteria are not part of the SPP Transmission Hardening Program.

The tables capture the SPP Transmission Hardening program projects and costs based on Commission audit staff's review of FPL's annual SPPCRC filings and SPP annual status reports. The annual costs include actual and/or estimated costs for all activities performed in the SPP program in a specific year. The program activities include hardening projects initiated, in various stages of construction, or completed and closed out.

The estimated and actual annual transmission hardening costs are also a function of the number of structures to be replaced, actual historical replacement costs, and updated cost assumptions (e.g., labor and materials).

As shown in **Table 8**, for the 2020 to 2021 period, legacy FPL completed 1,529 transmission hardening projects and Gulf completed 334 projects. FPL's and Gulf's total costs over the two-year period were $138.9 million and $48.9 million, respectively.

Florida Power & Light Company SPP Transmission Hardening Program Pre-Merger Projects and Costs 2020-2021				
Service Area	**Projects Planned**	**Projects Completed**	**Estimated Costs ($M)**	**Actual Costs ($M)**
2020				
Legacy FPL	1,100	942	$52.9	$86.0
Former Gulf	70	62	$5.3	$8.3
2021				
Legacy FPL	822	587	$42.9	$52.9
Former Gulf	372	272	$45.5	$40.6
Total 2020-2021				
Legacy FPL	**1,922**	**1,529**	**$95.8**	**$138.9**
Former Gulf	**442**	**334**	**$50.8**	**$48.9**

Table 8 *Source: FPL's Responses to Commission Audit Staff's DRs 3.61 and 3.62*

For the post-merger years of 2022 and 2023 shown in **Table 9**, FPL completed an additional 1,239 projects. Total costs over the two-year period were $119 million. FPL completed the hardening of all transmission structures in its legacy service area in 2022 and began focusing on

hardening structures in its Northwest Region (former Gulf service area). FPL anticipates completing its SPP Transmission Hardening Program by year-end 2033.

Florida Power & Light Company SPP Transmission Hardening Program Post-Merger Projects and Costs 2022-2023				
Service Area	**Projects Planned**	**Projects Completed**	**Estimated Cost ($M)**	**Actual Cost ($M)**
2022				
Consolidated FPL	1,271	900	$81.1	$68.5
2023				
Consolidated FPL	469	339	$35.6	$50.5
Total 2022-2023				
Consolidated FPL	**1,740**	**1,239**	**$116.7**	**$119.0**

Table 9 *Source: FPL's Response to Commission Audit Staff's DR 3.61*

VI. Distribution Vegetation Management

A. Program Initiatives

The single largest cause of electric power outages is fallen or wind-blown trees and limbs. Keeping trees and vegetation from encroaching on overhead conductors and triggering power outages is critical to service reliability. FPL's SPP Distribution Vegetation Management (DVM) Program promotes system reliability by increased levels of vegetation maintenance over historical levels, reduced storm restoration costs and improved day-to-day reliability complying with the Commission's storm preparedness objectives as evidenced in Order No. PSC-07-0468-FOF-EI.

The Commission approved FPL's DVM program within its 2023-2032 SPP in Order No. PSC-2022-0389-FOF-EI, issued on November 14, 2022, in Docket No. 20220051-EI. The program incorporated the former Gulf Power service area into FPL's current service area. Combined, the service area spans across 19 management areas.

FPL's management area consists 81,823 miles of distribution lines with the consolidation of FPL and the former Gulf Power. The program comprises multiple initiatives such as preventive maintenance, restoration of services, customer trim requests, and support of system improvement and expansion projects. The respective costs for the proactive preventive maintenance initiatives are recovered through the SPPCRC, while the costs for the remaining initiatives are recovered through the base rates.

1. Preventive Maintenance

According to the FPSC's November 2024 Annual Summary Report, FPL intends to conduct annual preventive vegetation management on approximately 17,000 miles of distribution feeders and laterals. The following cyclical DVM initiatives support the targeted miles:

- Three-Year Cycle (Feeders)
- Mid-Cycle (Feeders)
- Six-year Cycle (Laterals)

Cyclical and mid-cycle maintenance are each performed by several contractors throughout FPL's system. Per FPL's DVM program practices, contractors follow NESC Rule 218, the American National Standards Institute (ANSI) A-300 Tree Care Standards, and all other applicable standards. Mid-cycle trimming typically occurs between 12 to 18 months on certain fast-growing trees such as palm, crepe myrtle, or older oaks and pines. The type of vegetation as mentioned must be trimmed before the next scheduled cycle trim date.

To enhance its feeder vegetation management program, FPL has implemented a mid-cycle program that includes patrolling and maintaining feeders between planned maintenance cycles to address vegetation concerns that may cause an outage prior to the next planned cycle. Having a maintenance age of 12 to 18 months, mid-cycle work usually involves specific trees with a fast

growth span. These particular trees should be addressed before the next scheduled cycle vegetation maintenance date.

Distance ranges are not intended as a one-size-fits-all approach. Based on contractor judgment some species may allow A-300 standards to be met with less than eight feet of clearance, while other species may require more than 12 feet of clearance to provide safety and reliability on primary lines. Directional pruning is a technique that removes branches that grow towards obstructions while leaving branches that grow away.

To complement FPL's cyclical maintenance on feeders, ground-based LiDAR, as well as satellite imagery, have been implemented to develop predictive analytics, typically for critical infrastructure. LiDAR is a remote-sensing technology that uses laser beams to measure distances and movement in real time. For cost savings, LiDAR is used for situation awareness where work can be assigned only where it needs to be conducted. These types of advanced analytics have a potential benefit of further reducing vegetation-related outages during extreme weather events.

FPL adjusted the four-year average trim cycle for the distribution laterals in the former Gulf Power area to match FPL's six-year cycle. A six-year lateral trim cycle necessitates more aggressive trimming than required for a four-year trimming cycle. This results in a preventative maintenance trim specification that can last for an average of six years.

Trimming to a six-year cycle can include trimming to a greater depth, directional trimming to promote new growth away from power lines and removing trees to reduce occurrences of tree limbs contacting conductor lines. Most importantly, a six-year cycle will require fewer maintenance trim crew visits.

Trim cycle efficiencies are a direct result from converting former Gulf's trim cycles to FPL's six-year lateral cycle. One of the efficiencies realized is a standardized annual work plan. According to FPL, reduced overall costs are attained due to contractor crew allocation and the management of cycle trim dates being timelier and more accurate.

2. Restoration of Services

Restoration of services must be conducted as quickly as possible in accordance with the Company's DVM standards during a utility-declared emergency. During those times, due to safety considerations and the urgency of service restoration, it may be appropriate to deviate from proper pruning technique standards. Once the restoration has been restored, corrective pruning is completed as necessary.

FPL requires their vegetation management contractors to staff summer late crews for response to trouble restoration of unnamed weather event outages such as late afternoon thunderstorms. From the moment of initial contact, the contractor is expected to be at the job site within one hour. Once at the jobsite, the contractor will assess the work scope and mobilize their work force to complete the required trimming for restoration. The window for completed trimming is approximately 120 minutes from arrival.

According to FPL, the Company has found cost savings by conducting the cyclical vegetation management tasks first and then responding to any restoration work as it arises. This approach

alleviates having to call in crews after hours. Commission audit staff notes that un-named storm restoration is included in the SPPCRC.

When restoration work is needed, a separate work order within the Work Breakdown Structure (WBS) is submitted and used to indicate the restoration work. The restoration work order is transmitted by the summer late crews utilizing S-MOBILE (a system specified in the SPP Scope.)

3. Customer Trim Requests

FPL encourages customers to submit a request if the customer feels tree branches are growing too close to an electrical line. Customers may contact FPL via its website requesting to trim trees around distribution lines in their neighborhoods or homes.

After discussion with the customer or conducting a follow-up investigation, FPL will determine if the request can be scheduled in the next scheduled maintenance cycle or necessary maintenance is to be performed by a DVM program contractor.

If a trim request is warranted, a FPL arborist, or their designated third-party contract arborist representative, will forward the work request to issue it to FPL's line clearance contractor. Within 21 days, the trim request work order is completed at no cost to the customer. Upon completion of requested work, FPL notifies the customer of the resolution.

4. Right Tree, Right Place Initiative

The Right Tree, Right Place Initiative is a partnership program between FPL, its customers, and local government. The program educates and encourages stakeholders to choose appropriate locations for planting trees potentially avoiding any future outages.

While all FPL VM personnel are affiliated with the Right Tree, Right Place Initiative, there is no job title or job function associated with this program. The initiative is designed more for customer interaction and messaging and is not a separately budgeted program. The costs for marketing materials are not included in the SPPCRC.

B. Prioritization Methodology and Contractor Selection

1. Prioritization

DVM is prioritized on an annual basis ensuring compliance with cycle schedules and is based on factors such as last trim date and current reliability performance. On average, a feeder outage can affect approximately 1,000 customers, while a lateral outage may only affect 40 customers. It is for this reason that FPL prioritizes a three-year average cycle for maintaining feeders and a six-year average for laterals.

Per the contractor's scope of work for distribution line clearing, FPL will furnish the contractor with a deployment plan of scheduled planned maintenance work units on a quarterly basis. This ensures the contractor understands the magnitude of projects and is able to execute the planned work schedule. Furthermore, each contractor is held to FPL's standard based on their performance and productivity.

According to FPL, it will be shifting feeder maintenance to a prescriptive, unit-based assignment program. Historically, an hourly rate cost structure was applied to feeders. However, by implementing a cost per mile maintenance and trimming pricing for feeders in an assigned work plan for any given year, more certainty between expected costs versus hourly costs are discernable.

2. Contractor Selection

FPL's bidding process assesses potential contractors and suppliers ensuring they all meet technical and commercial requirements. All contractors must be familiar with NERC Standard FAC-003, and conform to ANSI standards. Furthermore, for safety purposes, contractors' safety programs must comply with ANSI Z133.1 for Tree Trimming Activities and the requirements of Occupational Safety and Health Administration (OSHA) CFR 1910.269 for Line Clearance Tree Trimming Operations.

Contractors are also evaluated based on its safety record by reviewing the contractors' OSHA rating and injury history; as well as, understanding the contractors' Experience Modifier Rate (EMR). The EMR is an insurance industry standard number which gauges contractors' risk of injury.

Presently, FPL has three DVM contractors, employing approximately 900 crew members. Some of these same contractors and crew members perform Transmission Vegetation Management (TVM) services as well. However, separate contracts are issued for the different programs. Contractors are held accountable to contract scope and specifications as they are provided with scopes of work that contain specifications related to performance and expectations.

C. Management Oversight

FPL's Director of Central Maintenance Programs & Services is charged with oversight of both the DVM and Transmission Vegetative Management (TVM) programs' financials, planning, regulatory compliance, and execution for all of FPL's service areas. Under the Director, the DVM organization consists of four Vegetation Operation Leaders, 23 arborists, and a Lead Project Manager for Power Delivery, Distribution.

1. Operations Initiatives

As part of the ongoing monitoring of the SPP DVM program, the Director and his staff attend and participate in very detailed monthly budget meetings, the Corporate Strategy Process, and the Budget Review Committee. Additionally, the Director and staff perform the following tasks to ensure the DVM SPP stays on task, identifies potential issues, and achieves its yearly goals and objectives:

- Conduct periodic meetings to validate projects and associated costs.
- Review project schedules to ensure estimated completion times and variances are addressed.

- Review primary contractor and third-party support costs and discuss concerns with Integrated Supply Chain monthly.

- Review contractor safety performance periodically with the Power Delivery Leadership.

- Review performance and quality issues with contracting companies.

For goal-setting purposes, FPL uses the estimated annual number of DVM projects (computed by miles) and the estimated annual costs of projects as two key performance indicators. FPL refers to its annual SPPCRC true-up cost filing, and annual SPP report to set framework used for meeting program and project schedules and budgets.

2. Quality Assurance and Quality Control

Throughout the DVM preventive cycle, FPL conducts QA/QC inspections by patrolling each distribution feeder and lateral once distribution vegetation maintenance work is completed. The costs for the QA/QC inspections are recovered through the SPPCRC.

a. Quality Assurance

As part of its QA process, FPL representatives use a two-step process to evaluate contractor line clearance work to ensure it meets established guidelines (including Sarbanes-Oxley) as part of quality and compliance standards. The first step consists of an on-site line clearing inspection performed by an FPL representative while the contractor is performing work within the circuit. The goal is to identify any defects and have them corrected before the contractor leaves the site. While any findings do not count against the supplier's quality score, the representative will use the findings as a training opportunity.

The second step consists of a final QA inspection where an FPL representative will inspect at least 10 percent of the work to evaluate the quality and criteria of the finished product. The representative will score the results and factor them into the contractor's quality score. At this point, the representative will assign actionable rework, if necessary. Upon completion of the rework, FPL will perform a second 10 percent random QA sample to verify the contractor has corrected the defects. The contractor must complete any rework to correct a trimming defect within 30 days of issuance to the contractor. Otherwise, the rework is non-billable to FPL, and the Company may request documentation as to date, time, quantity, and crew information for each completed rework task.

b. Quality Control

The DVM program also contains work scopes to be paid in agreed upon hourly rates, and fixed cost per mile rates for cycle maintenance and trimming work. FPL's Work Management System (WMS) platform sends mileage data to an application used by contractors in the field. As contractors update completed mileage work in the application, WMS captures the percentage of work completed on a project in miles. As a QC measure, an FPL representative then compares project cost and mileage estimates to the actual cost and completed mileage verifying the hours charged are consistent with expectations for the given project.

D. Analysis of Projects and Costs

Table 10 depicts the 2020 and 2021 estimated and actual DVM miles maintained and trimmed and associated costs for the legacy FPL and former Gulf service territories, as both entities were operating independently prior to the merger. Over this period, FPL owned approximately 70,000 circuit miles of distribution lines, while Gulf owned approximately 7,000 miles.

Over the two-year period shown, FPL maintained and trimmed 30,665 miles of vegetation at a cost of $123.3 million. Gulf maintained and trimmed 3,083 miles at an actual cost of $9.8 million. The average costs per mile maintained and trimmed for FPL and Gulf were $4,021 and $3,179, respectively.

Florida Power & Light Company
SPP Distribution Vegetation Management Program
Pre-Merger Maintenance and Trim Costs
2020-2021

Service Area	Estimated Miles Maintained & Trimmed	Actual Miles Maintained & Trimmed	Estimated Costs ($M)	Actual Costs ($M)	Actual Cost Per Mile
2020					
Legacy FPL	15,200	15,269	$61.1	$60.7	$3,975
Former Gulf	2,000	1,765	$5.0	$4.8	$2,720
2021					
Legacy FPL	15,200	15,396	$61.3	$62.6	$4,066
Former Gulf	2,000	1,318	$4.7	$5.0	$3,794
Total 2020-2021					
Legacy FPL	**30,400**	**30,665**	**$122.4**	**$123.3**	**$4,021**
Former Gulf	**4,000**	**3,083**	**$9.7**	**$9.8**	**$3,179**

Table 10 *Source: FPSC SPP Annual Status Reports 2021 and 2022*

Table 11 shows the 2022 and 2023 post-merger estimated and actual DVM miles maintained and trimmed, with associated costs for FPL's DVM program initiatives. For 2022, FPL estimated 16,690 of maintenance and trimming miles totaling $67 million, at a cost of $4,014 per mile. Actual miles maintained and trimmed were 19,284 totaling $71 million at a cost of $3,682 million, representing a $332 savings per mile or eight percent less per mile than estimated.

For 2023, FPL once again maintained and trimmed more miles than estimated, 17,039 totaling $86.8 million compared to 16,690 miles totaling $73 million. However, the actual costs per mile of $5,094 exceeded the estimated $4,374 per mile by 16 percent. According to FPL, an increase in materials and labor used for the SPP programs impacted the actual costs of projected plans.

Over the two-year period shown, FPL maintained and trimmed 36,323 miles. Total costs were $157.8 million, averaging $4,344 per mile. FPL noted that there is a fluctuating complexity from year to year for various vegetation management projects (e.g., certain circuits that are easily

accessible versus circuits requiring specialized equipment to access lines). Various factors regarding equipment and crews impact the cost of work in the annual vegetation management plan.

As FPL undergrounds more laterals as part of the SPP Distribution Lateral Hardening Program, FPL foresees a decrease in distribution vegetation management costs for laterals. However, the DVM program and its associated costs are reliant on several factors including: the total number of overhead laterals and feeders in the system, mid-cycle maintenance, and customer trim requests. These factors can change year-to-year due to construction of new overhead feeders and laterals as a result of growth and system expansion.

Florida Power & Light Company SPP Distribution Vegetation Management Program Post-Merger Initiatives and Costs 2022-2023					
Planned VM Initiatives	**Estimated Miles Maintained & Trimmed**	**Actual Miles Maintained & Trimmed**	**Estimated Costs ($M)**	**Actual Costs ($M)**	**Actual Cost Per Mile**
2022 Consolidated FPL					
Dist. Three-Year Cycle (feeders)	4,505	4,562	$18.1	$17.9	$3,924
Dist. Mid-Cycle (feeders)	8,450	10,667	$11.6	$17.0	$1,594
Dist. Six-Year Cycle (laterals)	3,735	4,055	$21.2	$21.0	$5,179
Other (Visual Surveillance, Debris Removal, Restoration, & Support)	Not forecasted	N/A	$16.1	$15.1	N/A
Total	**16,690**	**19,284**	**$67.0**	**$71.0**	**$3,682**
2023 Consolidated FPL					
Dist. Three-Year Cycle (feeders)	4,488	4,452	$16.6	$18.2	$4,088
Dist. Mid-Cycle (feeders)	8,272	8,643	$11.6	$16.8	$1,944
Dist. Six-Year Cycle (laterals)	3,930	3,944	$23.9	$26.1	$6,618
Other (Visual Surveillance, Debris Removal, Restoration, & Support)	Not Forecasted	N/A	$20.9	$25.7	N/A
Total	**16,690**	**17,039**	**$73.0**	**$86.8**	**$5,094**
Total 2022-2023 Consolidated FPL					
Dist. Three-Year Cycle (feeders)	8,993	9,014	$34.7	$36.1	$4,005
Dist. Mid-Cycle (feeders)	16,722	19,310	$23.2	$33.8	$1,750
Dist. Six-Year Cycle (laterals)	7,665	7,999	$45.1	$47.1	$5,888
Other (Visual Surveillance, Debris Removal, Restoration, & Support)	Not Forecasted	N/A	$37.0	$40.8	N/A
Total	**33,380**	**36,323**	**$140.0**	**$157.8**	**$4,344**

Table 11

Source: FPL's Response to Commission Audit Staff's DR 4.23

VII. Transmission Vegetation Management

A. Program Initiatives

Vegetation impacting transmission facilities can cause major power outages to tens of thousands of customers. Therefore, it is essential to have standards and requirements to mitigate and prevent these outages from occurring.

To ensure the reliability of the Bulk Electric System (BES), transmission owners, such as FPL, are subject to North Electric Reliability Corporation's (NERC's) vegetation management standards for all its overhead transmission circuits operating at or above 200 kV. NERC mandates that each owner must have a Transmission Vegetation Management (TVM) Program and includes the following three elements:

- Transmission Inspections
- Inspection Results and Findings.
- Annual TVM Work Plan

Per NERC Standard FAC-003-4, each transmission owner must report to its Regional Reliability Organization (e.g., SERC Reliability Corporation) all vegetation related outages on transmission circuits 200 kV and higher and any other lower voltage lines designated to be critical to the reliability of the BES. FPL's TVM program includes the former Gulf and FPL service areas. The consolidated area spans across 19 management areas covering 9,537 miles of transmission lines. Approximately, 6,358 miles (two-thirds) of FPL's transmission line corridors are subject to NERC's requirements while 3,179 miles are considered non-NERC corridors. However, FPL intends to conduct annual vegetation management on all 9,537 miles of transmission corridors.

B. Prioritization Methodology and Contractor Selection

As mandated by FERC, FPL performs ground inspections on all of its transmission corridors annually, with no more than 18 months between inspections.

FPL's TVM is designed to manage vegetation from encroaching into the minimum vegetation clearance distance (MVCD). The key elements of the program are to inspect the applicable transmission corridors, document vegetation, prescribe a work plan, and execute the work plan prior to the vegetation encroaching into the Vegetation Action Threshold (VAT) distance for NERC lines and Trigger distance for non-NERC lines. VAT is calculated by adding MVCD to sag/blowout potential plus a buffer of two feet. Trigger distance is the minimum distance away from energized conductors.

In addition to ground inspections, FPL also performs visual and aerial inspections of NERC and non-NERC transmission line corridors. Using fixed-wing planes to inspect the entire transmission system, these aerial patrols typically take place prior to the peak of storm season and during storm season identifying and addressing priority and hazard tree conditions.

Currently, FPL has three TVM contractors, employing approximately 100 crew members. Some of these same contractors and crew members perform DVM services as well. However, separate contracts are issued for the different programs. Contractors are held accountable to contract scope and specifications as they are provided with scopes of work that contain specifications related to performance and expectations. It is essential for all TVM contractors to be familiar with the NERC Standard FAC-003, as FPL has explicit requirements under the standard which must be upheld by its contractors.

Per the contractor's scope of work for transmission line clearing, FPL will furnish the contractor with a deployment plan of scheduled planned maintenance work units on a quarterly basis. This ensures the contractor understands the magnitude of projects and is able to execute the planned work schedule. Furthermore, each contractor is held to standard by their performance and productivity.

C. Project Management Software

Transmission vegetation management is tracked in FPL's Transmission Vegetation Management System (TVMS), a GPS based system used to track trees, inspection work types (i.e., maintenance strategies and vegetation control methods), and due dates. TVMS analyzes the collected data and determines a prescriptive course of action which ultimately becomes the work plan for contractors and FPL crews. The work flow and information provided ensures the right trees are targeted. Compliance with NERC transmission vegetation management standards and procedures is measured and verified in TVMS.

Contractors use tablets to document work performed, get work prescriptions approved, and have FPL patrols follow up to ensure that the work has been done. Weekly reports identifying completed inspections and exceptions are reviewed by TVM supervisors and tracked against the annual work plan. A capital and O&M split is applied to each work request based on scopes of work for every individual project. Items captured in the work request include estimated costs, material quantities, and labor hours. This information is ultimately linked to FPL's tracking and reporting system WBS.

FPL tracks all costs recoverable through SPPCRC in its SAP financial accounting system. For NERC purposes, FPL arborists initiate unique jobs and issue them to the contractor through TVMS. As the unique job is fulfilled, the charges in TVMS feed into SAP and are recorded into a separate FERC account.

D. Management Oversight

FPL's Director of Central Maintenance Programs & Services is charged with oversight of both the DVM and TVM programs' financials, planning, regulatory compliance, and execution for all of FPL's service areas. Under the Director, the TVM organization consists of a Vegetation Services Manager, two Vegetation Operation Leaders, two Arborists, and a Lead Project Manager for Power Delivery, Distribution.

As part of the ongoing monitoring of the SPP TVM program, the Director and his staff attend and participate in very detailed monthly budget meetings, the Corporate Strategy Process, and the Budget Review Committee. Additionally, the Director and staff perform the following tasks to ensure the TVM SPP stays on task, identifies potential issues, and achieves its yearly goals and objectives:

- Conduct periodic meetings to validate projects and associated costs.
- Conduct quarterly update meetings with Transmission Operations stakeholders.
- Review project schedules to ensure estimated completion times and variances are addressed.
- Review primary contractor and third-party support costs and discuss concerns with Integrated Supply Chain monthly.
- Review contractor safety performance periodically with the Power Delivery Leadership.
- Review performance and quality issues with contracting companies.

For goal-setting purposes, FPL uses the estimated annual number of TVM projects (computed by miles) and the estimated annual costs of projects as two key performance indicators. FPL refers to its annual SPPCRC true-up cost filing, and annual SPP report to set the framework used for meeting program and project schedules and budgets.

Throughout the TVM preventative cycle, FPL conducts QA/QC inspections by patrolling transmission lines once vegetation maintenance work is completed. Post-completion, QA/QC measures include visual and aerial inspections of all the transmission line corridors including LiDAR inspections of NERC transmission line corridors. Finally, in keeping with NERC standards, an independent patroller will perform a peer patrol on NERC applicable lines to ensure vegetation management practices are aligned with program expectations and conforms to Sarbanes-Oxley. The costs for the QA/QC inspections are recovered through the SPPCRC.

Transmission contractors are also mandated to have an instituted QA program along with documented quality control procedures which must also be approved by FPL. FPL representatives use a two-step process to evaluate contractor line clearance work to ensure it meets established guidelines as part of Quality Control & Compliance standards.

The first step consists of an on-site line clearing inspection performed by an FPL representative while the contractor is performing work within the circuit. The goal is to identify any defects and have them corrected before the contractor leaves the site. While any findings do not count against the supplier's quality score, the representative will use the findings as a training opportunity.

Like the DVM program, the second step consists of a final QA inspection where an FPL representative will inspect at least 10 percent of the work unit to evaluate the quality and criteria of the finished product. The representative will score the results and factor them into the

contractor's overall quality score. At this point, the representative will assign actionable rework, if necessary. Upon completion of the rework, FPL will perform a second 10 percent random QA sample to verify the contractor has corrected the defects. The contractor must complete any rework to correct a trimming defect within 30 days of issuance to the supplier. Otherwise, the rework is non-billable to FPL, and the Company may request documentation as to date, time, quantity, and crew information for each completed rework task.

TVMS generates a weekly report which monitors all TVM activities within the system. TVM supervisors utilize and review these reports on a routine basis focusing on progress towards completion. Annually, the TVM team reviews work prescriptions and work batches of the annual work plan ensuring the plan meets the programs objectives.

FPL arborists enter estimated hours worked for each TVM project into TVMS. As projects progress to completion, the contractor arborists will update the actual hours worked within TVMS. As another Q/C measure, an FPL arborist will validate the data and hours to ensure the contractor is paid in agreed upon hourly rates consistent with expectations for the given project.

Transmission assets located in drought areas put the BES at risk of outages due to risk of wildfires. Drought conditions within the FPL management area usually occur from October through May of each year. As a best practice, FPL monitors the Florida Drought Index Monitor comparing drought maps to its overlays (from satellite and LiDAR imageries) with location of transmission assets ensuring wildfire risk mitigation. In addition, the Florida Forest Service notifies FPL via systems operations anytime prescribed controlled burns are scheduled and conducted within FPL's management area while the United States Sugar Corporation notifies FPL of any sugar cane burns taking place in the Everglades.

Constantly maintaining a situational awareness of its transmission systems, FPL receives an automated mail notification from the NERC Transmission Event Notification System known as a TENS Notice. The email alerts FPL of transmission outages, some of which could be vegetation related. Furthermore, as part of its continuous improvement processes, FPL recently instituted an Automated Clearance Report. This automated email generated in real time with LiDAR data alerts FPL with information that vegetation could be encroaching upon FPL's internal VAT. Receiving both alerts allow FPL to take swift and responsive action mitigating potential outages.

E. Analysis of Projects and Costs

Table 12 shows the 2020 and 2021 TVM costs for Gulf prior to merging with FPL. During this period, Gulf owned 1,677 circuit miles of transmission lines subject to annual aerial surveillance. The required maintenance and trimming for the prescriptive cycles (NERC and non-NERC) is not forecasted; rather, the work is based on a field assessment. As shown, the total actual costs over the two-year period amounted to $4.3 million for an average of $2.15 million a year ($.55 million less than the estimated average costs of $2.7 million).

Gulf Power Company SPP Transmission Vegetation Management Program Pre-Merger Maintenance and Trim Costs 2020-2021				
Transmission Annual Program	**Estimated Miles Maintained & Trimmed**	**Actual Miles Maintained & Trimmed**	**Estimated Costs ($M)**	**Actual Costs ($M)**
2020 Gulf Service Area				
Trans. Annual	Not Forecasted	1,675	$2.5	$2.1
2021 Gulf Service Area				
Trans. Annual	Not Forecasted	1,677	$2.9	$2.2
Total 2020-2021 Gulf Service Area				
Total	**3,350**	**3,352**	**$5.4**	**$4.3**

Table 12 *Source: FPL's Response to Commission Audit Staff's DR 4.23*

FPL's TVM costs for the same pre-merger period are presented in **Table 13**. At that time, FPL owned and visually inspected (via aerial surveillance) over 7,300 circuit miles of transmission lines, four times more miles than those owned by Gulf. The required trimming for the prescriptive cycles (NERC and non-NERC) is not forecasted; rather, the work is based on a field assessment. As shown in **Table 13**, FPL does capture annual miles maintained and trimmed, and estimated and actual costs for each cycle. Over the two-year period, the greatest TVM costs were associated with trimming of the NERC lines. Costs totaled $9.6 million, more than half of total TVM costs of $18.1 million. TVM work on NERC lines averaged $1,933 per mile. Non-NERC lines accounted for $6.4 million at $1,632 per mile. Costs captured for the "Other" category consists of visual surveillance, debris removal, restoration, and support.

Florida Power & Light Company SPP Transmission Vegetation Management Program Pre-Merger Maintenance and Trim Costs 2020-2021					
TVM Initiatives	**Estimated Miles Maintained & Trimmed**	**Actual Miles Maintained & Trimmed**	**Estimated Costs ($M)**	**Actual Costs ($M)**	**Actual Cost Per Mile**
2020 Legacy FPL					
Trans Annual (NERC)	Not Forecasted	2,671	$5.6	$4.9	$1,835
Trans Annual (non-NERC)	Not Forecasted	2,109	$2.3	$3.4	$1,612
Other (Visual Surveillance, Debris Removal, Restoration, & Support)	Not Forecasted	N/A	$1.0	$1.1	N/A
Total Trans. Annual	**7,278**	**4,780**	**$8.9**	**$9.4**	N/A
2021 Legacy FPL					
Trans Annual (NERC)	Not Forecasted	2,295	$5.6	$4.7	$2,048
Trans Annual (non-NERC)	Not Forecasted	1,812	$2.3	$3.0	$1,656
Other (Visual Surveillance, Debris Removal, Restoration, & Support)	Not Forecasted	N/A	$1.0	$1.0	N/A
Total Trans. Annual	**7,385**	**4,107**	**$8.9**	**$8.7**	N/A
Total 2020-2021 Legacy FPL					
Trans Annual (NERC)	Not Forecasted	4,966	$11.2	$9.6	$1,933
Trans Annual (non-NERC)	Not Forecasted	3,921	$4.6	$6.4	$1,632
Other (Visual Surveillance, Debris Removal, Restoration, & Support)	Not Forecasted	N/A	$2.0	$2.1	N/A
Total Trans. Annual	**14,663**	**8,887**	**$17.8**	**$18.1**	**N/A**

Table 13 *Source: FPL's Response to Commission Audit Staff's DR 4.23*

Table 14 shows post-merger TVM costs for each year 2022 through 2023. Since the merger, total annual miles of transmission lines in need of inspection now exceeds 9,300. For both years shown, total TVM costs surpassed the estimates. For 2022, actual costs were $15.8 million, $4.0 million over the estimated cost of $11.8 million; and for 2023, actual costs exceeded the estimate by $2.7 million. Like the DVM program, FPL attributes the budget overruns to increased costs of materials and labor as well as the fluctuating complexity from year-to-year for various vegetation management projects (e.g., certain circuits that are easily accessible versus circuits requiring specialized equipment to access lines). Various factors regarding equipment and crews impact

the cost of work in the annual vegetation management plan. Right-of-way costs are captured within the prescriptive cycle costs.

Florida Power & Light Company SPP Transmission Vegetation Management Program Post-Merger Maintenance and Trim Costs 2022-2023					
TVM Initiatives	**Estimated Miles Maintained & Trimmed**	**Actual Miles Maintained & Trimmed**	**Estimated Costs ($M)**	**Actual Costs ($M)**	**Actual Cost Per Mile**
2022 Consolidated FPL					
Trans (NERC)	Not Forecasted	1,458	$7.0	$10.7	$7,339
Trans (non-NERC)	Not Forecasted	1,151	$3.8	$4.1	$3,562
Other (Visual Surveillance, Debris Removal, Restoration, & Support)	Not Forecasted	N/A	$1.0	$1.0	N/A
Total Trans. Annual	**9,303**	**2,609**	**$11.8**	**$15.8**	N/A
2023 Consolidated FPL					
Trans Annual (NERC)	Not Forecasted	1,168	$7.0	$8.7	$7,449
Trans Annual (non-NERC)	Not Forecasted	921	$3.8	$4.9	$5,320
Other (Visual Surveillance, Debris Removal, Restoration, & Support)	Not Forecasted	N/A	$1.0	$0.9	N/A
Total Trans Annual	**9,371**	**2,089**	**$11.8**	**$14.5**	N/A
Total 2022-2023 Consolidated FPL					
Trans Annual (NERC)	Not Forecasted	**2,626**	**$14.0**	**$19.4**	**$7,388**
Trans Annual (non-NERC)	Not Forecasted	**2,072**	**$7.6**	**$9.0**	**$4,344**
Other (Visual Surveillance, Debris Removal, Restoration, & Support)	Not Forecasted	**N/A**	**$2.0**	**$1.9**	**N/A**
Total Trans Annual	**18,674**	**4,698**	**$23.6**	**$30.3**	**N/A**

Table 14 *Source: FPL's Response to Commission Audit Staff's DR 4.23*

VIII. Distribution Inspection Program

A. Program Initiatives

FPL's distribution inspection process enables more storm resilient poles, feeder equipment, and substations to reduce restoration costs and outage times associated with extreme weather conditions thereby improving overall service reliability.

FPL's SPP Distribution Inspection Program is an eight-year pole inspection cycle for approximately 1.4 million distribution wood poles throughout its service area. Annually, FPL performs pole inspections of approximately one-eighth of the distribution poles, as well as remediation to remove and replace poles that fail inspection. FPL further expanded its distribution pole inspection plan in 2020 to include concrete poles as part of the eight-year pole inspection process. The associated inspection and remediation costs are recovered through the SPPCRC. FPL also performs distribution substation and aerial infrared inspections; however, these associated costs are recovered through base rates.

The Commission requires the utilities to maintain a plan for auditing joint-use agreements, including inspections, and pole strength assessments. Costs for performing joint-use pole attachment inspections, including pole strength and attachment loading assessments, are paid for by the third-party attachers. The costs associated with removing the abandoned poles are recovered through base rates.

B. Prioritization Methodology

FPL selects and prioritizes its distribution pole inspection projects based on the last inspection cycle dates to ensure that all of the poles are inspected in compliance with the eight-year cycle. As such, approximately one-eighth of the distribution poles are inspected annually throughout its service area, including any remediation of the pole as a result of failing inspection. The Company remediates poles if they do not meet the NESC Grade B requirements. To allow for efficient scheduling and resource allocation to ensure compliance with the eight-year inspection cycle, remediation is prioritized based on those poles requiring immediate attention (Level 1) and those not requiring immediate attention (Level 2).

The Company has not identified any areas where the existing Distribution Inspection Program would not be feasible, reasonable, or practical.

C. Management Oversight

FPL's Director of Workload Planning and Strategy is responsible for the oversight of the Distribution Inspection Program. FPL uses Osmose Utility Services, an industry-leading pole inspection contractor, to perform system-wide inspection of its distribution poles. The inspections include a sound and bore and a visual examination from the ground-line to the top of

the pole to identify defects (e.g., wood rot, cracks, woodpecker holes, split and decayed tops). If the poles are not suitable for continued service, they are designated for replacement.

Osmose uses mobile computing technology to record inspection data and to calculate strength and loading calculations on wood poles to meet or exceed NESC requirements. The data is uploaded into the Osmose 360 Dashboard, an interactive platform that allows FPL to monitor performance and deadlines. Data from the dashboard is subsequently entered into FPL's Geographical Information Systems (GIS) for use by FPL's Distribution Inspection Program team to meet weekly with Osmose for any follow-up work to be performed.

Consistent with FPSC Order No. PSC-14-0594-PAA-EI, any pole that had less than 80 percent of full load at the prior eight-year inspection cycle will continue to be exempt from the loading assessment during the next eight-year inspection cycle, and Chromium Copper Arsenate (CCA) poles will only be excavated if they are older than 28 years. However, FPL conducts annual testing on one percent of the exempted poles to ensure existing safety and storm hardening programs are not compromised.

Post-completion QA/QC inspections are also performed on a quarterly basis. The Company selects four feeders at random, limited to 125 pole locations for each feeder, to be audited by an independent FPL internal survey team to verify that the actions reported by Osmose were performed. A QA/QC form is completed at each selected pole location, with recommended corrective measures, if any. FPL receives a report comprised of completed QA/QC forms which include detailed comments and photos of work exceptions. The report is reviewed and shared with Osmose for explanation, and if warranted, immediate action is taken to resolve any issues. If no additional exceptions are found, the respective work request proceeds to the close-out process.

FPL's QA/QC inspections ensure Distribution Inspection Program work is meeting the Company's expectations to safety, construction standards and workmanship, and conformity with Sarbanes-Oxley. This results in overall improved system resiliency, reliability, and customer satisfaction. QA/QC inspections with its embedded vendors provide an opportunity for feedback and training so repeat mistakes are minimized. The Commission also requires utilities to retain and provide, if requested, the cause of each wood pole failing inspection and corrective action taken.

D. Analysis of Projects and Costs

Total costs reported shown in **Tables 15 and 16** are the aggregate of SPPCRC and base rate costs. The SPP activity costs for pole inspections, replacements, and QA/QC follow-up inspections are recovered through the SPPCRC. The SPP base rate costs are for the removal and retirement of non-hardened assets, including work activities associated with pulling poles. The costs for transfers are split 50/50 between the SPPCRC and base rates. While not a part of the SPP Distribution Inspection Program, the costs for distribution substation/aerial infrared inspections, and removing/retiring third-party attacher poles are recovered through base rates.

Commission audit staff was unable to perform an analysis of the actual costs per inspection in each table because FPL uses the total costs of the program activities, which includes pole inspections, replacements, transfers, and pole pulls.

Table 15 shows the distribution wood pole/groundline inspections planned, completed, and associated costs for FPL and Gulf for each year 2020 and 2021, prior to the merger. During this time, FPL had 1.2 million poles in its legacy territory, 5.8 times greater than the 208,000 poles that are in the former Gulf's service territory.

Florida Power & Light Company SPP Distribution Inspection Program Pre-Merger Projects and Costs 2020-2021				
Eight-Year Wood Pole/ Groundline Project	**Inspections Planned**	**Inspections Completed**	**Estimated Costs ($M)**	**Actual Costs ($M)**
2020				
Legacy FPL	150,000	147,003	$54.5	$38.5
Former Gulf	26,000	25,542	$3.4	$4.6
2021				
Legacy FPL	150,000	151,114	$57.9	$62.3
Former Gulf	26,000	27,283	$3.0	$4.6
Total 2020-2021				
Legacy FPL	**300,000**	**298,117**	**$112.4**	**$100.8**
Former Gulf	**52,000**	**52,825**	**$6.4**	**$9.2**

Table 15 *Source: FPL's Response to Commission Audit Staff's Supplemental DR4.24*

Table 16 depicts distribution wood pole/groundline inspection planned and completed for the post-merger years 2022 and 2023. For the year 2022, FPL completed six percent more pole inspections than estimated (190,275 versus 180,000), while costs were only four percent greater ($63.1 million versus $60.9 million). For 2023, FPL achieved 261 more inspections than estimated, but did so at a total cost of $59.2 million, $3.5 million lower than the estimated $62.7 million. For the two-year period, FPL completed more inspections than estimated.

Florida Power & Light Company SPP Distribution Inspection Program Post-Merger Projects and Costs 2022-2023				
Eight-Year Wood Pole/ Groundline Project	**Inspections Planned**	**Inspections Completed**	**Estimated Costs ($M)**	**Actual Costs ($M)**
2022				
Consolidated FPL	180,000	190,275	$60.9	$63.1
2023				
Consolidated FPL	180,000	180,261	$62.7	$59.2
Total 2022-2023				
Consolidated FPL	**360,000**	**370,536**	**$123.6**	**$122.3**

Table 16 *Source: FPL's Response to Commission Audit Staff's DR 4.24*

IX. Transmission Inspection Program

A. Program Initiatives

Inspections of transmission circuits, including inspections of other facilities, is critically important. A transmission-related outage can affect tens of thousands of customers and cause cascading (i.e., a loss of power at one transmission facility can trigger successive power outages on other interconnected facilities), resulting in the loss of service to hundreds of thousands of customers. To mitigate such occurrence, FPL instituted a SPP Transmission Inspection Program to properly inspect transmission facilities using appropriate cycles and standards to help ensure they are prepared for extreme weather events. The SPP program consists of the following initiatives necessary to inspect approximately 83,600 transmission structures, and 277 transmission substations:

- Cyclical six-year substation inspections[4]
- Cyclical six-year wood pole/ground-line inspections
- Cyclical six-year above-ground wood structure inspections
- Ten-year above-ground non-wood structure inspections

The substation inspection initiative consists of inspecting circuit breakers, relays, and pull-off towers (i.e., structures that support the high voltage transmission lines interconnected with the substation).

The wood pole/ground-line initiative includes a visual inspection from the ground level to the top of the pole. The inspection includes a sound and bore test to determine the structural integrity of the pole. The inspection also involves excavating around the base of the pole to examine the condition of the wood at the groundline.

Inspections for above-ground wood structures are performed by contractors and include an overall assessment of the condition of the structures. Inspectors observe conductors, insulators, guy wires, static/shield wires, anchor rods, grounds, vegetation, and cross arms/braces. If a wood transmission structure does not pass a visual climbing or bucket truck inspection, it is designated for replacement with a concrete or steel transmission structure.

For non-wood structures (steel and concrete structures), the visual inspection includes an overall assessment of the structure condition (e.g., cracks, chips, exposed rebar, and rust) as well as other pole/structure components including the foundation, bolts, and line inspections of insulators, guys, cross-arms and braces, fuse switches, and arrestors. If a concrete or steel pole/structure fails the inspection, it is designated for repair or replacement.

[4]These include only the inspections of the pull-off structure/tower (i.e., foundations, all attachments, insulators, guys, cross-arms/braces, and bolts). They are not full substation inspections, such as thermography for hot spots and dissolved gas analysis of transformers, which are non-SPP program activities with costs recovered through base rates.

The contractors perform annual ground patrol visual inspections on wood and non-wood structures. However, the costs for these inspections are currently recovered through base rates. FPL also performs aerial infrared inspections (helicopter/drone) of transmission structures and substations on an annual basis. Drones are equipped with cameras and sensors, such as thermal sensors to detect component hot spots, i.e., for potential overheating conditions.

B. Prioritization Methodology

The associated tasks for a transmission inspection project includes five main components: preliminary engineering, detailed design, material requisition and acquisition, construction, and project close-out.

All transmission substations and wood pole/groundline inspections are prioritized based on the last inspection cycle dates to ensure that all substations and poles are inspected in compliance with the six-year cycle. As such, approximately one-sixth of the substations and poles are inspected annually.

Similarly, the above-ground (climbing or bucket truck) wood and non-wood (steel or concrete) structure inspections are selected and prioritized throughout FPL's service area based on the last cycle's inspection date. This ensures that structures are inspected in compliance with the established six and ten-year cycles, respectively.

FPL uses the following priority levels for its transmission pole and structure inspections:

Level 1 Priority – Identified as approaching the minimum NESC requirements for Grade B construction with the potential to fall below the minimum before the end of the current year. These poles/structures are incorporated into current year work plans for reinforcement, remediation, or replacement with concrete or steel transmission pole/structure. The timeframe for completion is typically driven by customer provided access to the facilities and the coordination of a scheduled outage with other facility clearances scheduled on the grid.

Level 2 Priority – Identified as approaching the minimum NESC requirements for Grade B construction but will not fall below the minimum prior to the end of the following year. These poles/structures are identified for reinforcement, remediation, or replacement with concrete or steel transmission pole/structure as planned work by the end of the calendar year following inspection.

Non-priority – Identified as having reduction in capacity, but still above the minimum NESC requirements. When reported, these structures are documented but do not require specific action until the next inspection.

The Company also prioritizes its inspections based on factors such as framing configuration (structural loading), transmission components, system importance, customer count, and inspection history for a transmission line section. Other economic efficiencies, such as multiple transmission line sections within the same corridor, are also considered. FPL has not identified

any areas where the inspections would not be feasible, reasonable, or practical under the Transmission Inspection Program.

C. Management Oversight

FPL uses an independent inspector to perform QA/QC assessments of transmission inspector results. The QA/QC inspections are performed to ensure the transmission inspection work is meeting the Company's expectations to construction standards and workmanship, safety, and conformance with Sarbanes-Oxley. This results in overall improved system resiliency, reliability, and customer satisfaction. The QA/QC inspections provide an opportunity for contractor feedback and training so repeat mistakes are minimized. The costs for the QA/QC inspections are recovered through the SPPCRC.

An FPL representative is assigned to oversee follow-up work based on the results of the QA/QC assessment. The representative ensures the follow-up work is constructed in accordance with the drawings, structure list, purchase order contracts and terms, and the Company's transmission installation standards while working with the foreman of the construction crew. The construction drawing of the follow-up work includes specific instructions for each work location. After working each individual location, the foreman signs and dates the construction drawing and notes any changes from the original scope.

The FPL representative also performs a QA/QC inspection at each work location and signs and dates the construction drawing. The FPL representative addresses any identified issues at time of installation with the foreman until it is corrected. Additionally, a third-party, independent vendor conducts quarterly audits of transmission hardening as-built construction drawings, and job close-out process.

D. Analysis of Projects and Costs

Total costs reported shown in **Tables 17, 18, and 19** are the aggregate of SPPCRC and base rate costs. The SPP activity costs for groundline and above-ground inspections, replacements, substation inspection, and QA/QC follow-up inspections are recovered through the SPPCRC.

Commission audit staff would note that it was unable to perform an analysis of the actual costs per inspection in each table because the SPP activity costs are combined. Also, the substation inspection activity specifically refers to the transmission pull-off structure/tower within the substation (i.e., foundations, all attachments, insulators, guys, cross-braces/arms, and bolts). However, full substation inspections are non-SPP activities which include thermography for hot spots and dissolved gas analysis of transformers. These costs are recovered through base rates.

Table 17 shows the number of Gulf's transmission inspections completed and the associated SPP estimated and actual costs for the years 2020 and 2021, when Gulf was operating as a separate entity prior to merging with FPL. Commission audit staff notes that substation inspection costs are not reported because Gulf did not track the associated costs separately from

general maintenance expenses. FPL also reported that data for the ten-year above ground (non-wood structures) and six-year wood pole/groundline inspections for Gulf is not available. Gulf's Commission-approved 2020 SPP transmission inspection program used a different cycle than FPL. As a result, Gulf did not track that information until the consolidated 2023 SPP.

Gulf Power Company SPP Transmission Inspection Program Pre-Merger Projects and Costs* 2020-2021				
Inspection Projects	**Inspections Planned**	**Inspections Completed**	**Estimated Costs ($M)**	**Actual Costs ($M)**
2020 Gulf Service Area				
Six-Year Above Ground (Wood Structures)	2,400	2,275	$0.3	$0.3
Inspection Follow-up Work	N/A	N/A	$3.2	$0.4
Total	**2,400**	**2,275**	**$3.5**	**$0.7**
2021 Gulf Service Area				
Six-Year Above Ground (Wood Structures)	2,400	1,798	$0.4	$0.2
Inspection Follow-up Work	N/A	N/A	$3.2	$1.8
Total	**2,400**	**1,798**	**$3.6**	**$2.0**
Total 2020-2021 Gulf Service Area				
Six-Year Above Ground (Wood Structures)	4,800	4,073	$0.7	$0.5
Inspection Follow-up Work	N/A	N/A	$6.4	$2.2
Total	**4,800**	**4,073**	**$7.1**	**$2.7**

*Costs associated with substation inspections at Gulf were not tracked separately from general maintenance expenses.

Table 17 *Source: FPL's Response to Commission Audit Staff's Supplemental DR 4.24*

Table 18 shows the 2020-2021 SPP Transmission Inspection Program costs for FPL's legacy service area prior to the merger with Gulf. FPL performed 0.28 percent (196) more inspections in 2021 (69,158) than 2020 (68,962).

Florida Power & Light Company SPP Transmission Inspection Program Pre-Merger Projects and Costs* 2020-2021				
Inspection Projects	**Inspections Planned**	**Inspections Completed**	**Estimated Costs ($M)**	**Actual Costs ($M)**
2020 Legacy FPL				
Annual Visual Inspection	68,000	68,962	$1.4	$1.2
Ten-Year Above Ground (Non-Wood Structures)	7,500	7,500		
Six-Year Wood Pole/Groundline	42	49		
Six-Year Above Ground (Wood Structures)				
Inspection Follow-up Work	N/A	N/A	$34.4	$27.2
Total	**75,542**	**76,511**	**$35.8**	**$28.4**
2021 Legacy FPL				
Annual Visual Inspection	69,000	69,158	$1.0	$1.1
Ten-Year Above Ground (Non-Wood Structures)	8,695	8,695		
Six-Year Wood Pole/Groundline	257	257		
Six-Year Above Ground (Wood Structures)				
Inspection Follow-up Work	N/A	N/A	$31.2	$33.3
Total	**77,952**	**78,110**	**$32.2**	**$34.4**
Total 2020-2021 Legacy FPL				
Annual Visual Inspection	137,000	138,120	$2.4	$2.3
Ten-Year Above Ground (Non-Wood Structures)	16,195	16,195		
Six-Year Wood Pole/Groundline	299	306		
Six-Year Above Ground (Wood Structures)				
Inspection Follow-up Work	N/A	N/A	$65.6	$60.5
Total	**153,494**	**154,621**	**$68.0**	**$62.8**

*FPL does not budget or track expenditures based on structure materials. As such, dollar amounts shown represent all transmission structure inspections regardless of materials.

Table 18 *Source: FPL's Response to Commission Audit Staff's DR 4.24*

For the post-merger period of 2022 and 2023 shown in **Table 19**, FPL's total costs for its SPP Transmission Inspection Program were $121.4 million. About three percent, or $3.3 million, of the program costs were attributed to the annual visual inspection, transmission ten-year above ground (non-wood structures) and six-year wood pole/groundline and above ground (wood structures) inspections.

Florida Power & Light Company SPP Transmission Inspection Program Post-Merger Projects and Costs* 2022-2023				
Inspection Projects	**Projects Planned**	**Projects Completed**	**Estimated Costs ($M)**	**Actual Costs ($M)**
2022 FPL Consolidated Service Area				
Annual Visual Inspection	81,000	82,768	$1.4	$1.6
Ten-Year Above Ground (Non-Wood)	8,695	8,695		
Six-Year Wood Pole/Groundline Six-Year Above Ground (Wood Structures)	758	758		
Inspection Follow-up Work	N/A	N/A	$31.5	$54.0
Total	**90,453**	**92,221**	**$32.9**	**$55.6**
2023 FPL Consolidated Service Area				
Annual Visual Inspection	84,000	83,295	$1.4	$1.7
Ten-Year Above Ground (Non-Wood Structures)	10,994	10,994		
Six-Year Wood Pole/Groundline Six-Year Above Ground (Wood Structures)	644	660		
Inspection Follow-up Work	N/A	N/A	$74.5	$64.1
Total	**95,638**	**94,949**	**$75.9**	**$65.8**
Total 2022-2023 FPL Consolidated Area				
Annual Visual Inspection	165,000	166,063	$2.8	$3.3
Ten-Year Above Ground (Non-Wood Structures)	19,689	19,689		
Six-Year Wood Pole/Groundline Six-Year Above Ground (Wood Structures)	1,402	1,418		
Inspection Follow-up Work	N/A	N/A	$106.0	$118.1
Total	**186,091**	**187,170**	**$108.8**	**$121.4**

*FPL does not budget or track expenditures based on structure materials. As such, dollar amounts shown represent all transmission structure inspections regardless of materials.

Table 19 *Source: FPL's Response to Commission Audit Staff's DR 4.24*

X. Substation Storm Surge/Flood Mitigation Program

A. Program Initiatives

FPL's transmission and distribution substations are another vital component of its electric utility system to provide efficient, safe, and reliable electric service to customers. They allow for the integration of generation, transmission, and distribution systems through various functions such as circuit switching, voltage regulation, power monitoring, and fault protection.

FPL's Substation Storm Surge/Flood Mitigation Program initiatives over the 2020 through 2023 period have included the implementation of various mitigation measures to reduce outages and restoration costs. Such measures involve raising equipment above flood level, installing flood monitors, constructing flood mitigation walls, installing flood gates, improving drainage, and rebuilding substations when warranted. Substation flood monitors, for example, enable the Company to track water level and to alert operators to proactively de-energize a substation to avoid equipment damage.

As of year-end 2023, the Company has identified 22 substations prone to storm surge and/or flooding of which 18 have been hardened. FPL also continues to monitor and evaluate storm surge and flooding at 25 substations (10 transmission and 15 distribution) not constructed above Federal Emergency Management Agency's (FEMA) 100-year flood elevation (i.e., one percent annual risk of elevation above sea level, at which base flood will inundate). These substations have real-time water level monitoring systems and communication equipment to provide notice and allow the Company to proactively de-energize a substation when flooding is detected. If necessary, FPL will implement storm surge and flood mitigation measures at these substations based on additional information received from flood monitors or active storm surge that occurs during extreme weather events.

B. Prioritization Methodology

FPL targets substations for hardening that have had a history of storm surge and/or flooding during extreme weather events. The Company's annual prioritization criteria for its substation projects are based on the impacts and lessons learned from hurricanes and extreme weather events. The results of such evaluations are used by an FPL project manager, electrical engineer, and a specialized structural principal engineer to determine and prioritize substations needing to be hardened.

Table 20 depicts the 18 FPL substations that have been prioritized and hardened, of which 12 are located in FPL's Northwest Region (former Gulf service area). Mitigation activities included installation of flood monitors, drain inlets, exfiltration trenches, rolling flood gates, berms, and storm surge walls. Relay vault (control house that encloses electronic equipment) improvements were also made that includes installation of new flood doors and exterior waterproofing.

The St. Augustine substation, built before the existence of FEMA's 100-year flood elevation, was raised over five feet to protect against storm surge/flooding, utilizing the latest standard moduflex substation arrangement and protection scheme that focuses on isolating faults and ensuring system stability. This involves implementation of intelligent electronic devices, i.e., microprocessor-based controllers that perform a variety of functions within a substation, including protection, control, and monitoring. The new substation design included a pure copper ground grid to alleviate corrosion concerns and concrete oil pits for the power distribution transformers to ensure that oil would not contaminate the San Sebastian River. According to FPL, the St. Augustine substation rebuild project was engineered according to the unique complex conditions specific to that substation and, at this time, there are no comparable planned SPP substation rebuild projects.

Florida Power & Light Company SPP Substation Storm Surge/Flood Mitigation Program Hardened Substations 2020–2023		
Substation	**Type**	**Year Completed**
Former/Legacy FPL		
Shalimar*	Distribution	2020
Niceville*	Distribution	2020
NAS North Terminal*	Transmission	2020
NAS South Terminal*	Transmission	2020
Smith Construction*	Distribution	2020
Blountstown*	Distribution	2020
Romana*	Distribution	2020
Choctawhatchee North Terminal*	Transmission	2020
Choctawhatchee South Terminal*	Transmission	2020
Aventura	Distribution	2021
Opa Locka	Distribution	2021
Corkscrew	Distribution	2021
Hulbert*	Distribution	2022
Hathaway*	Distribution	2022
Phillips Inlet*	Distribution	2022
St. Augustine	Distribution	2023
Pine Ridge	Distribution	2023
South Daytona	Distribution	2023**

*FPL's Northwest Region (former Gulf service area)
**Initially planned for completion in 2023, delayed and completed in 2024

Table 20 *Source: FPL's Response to Commission Audit Staff's DRs 4.9 and 4.10*

Table 21 depicts three substations (Chambers, Lewis, and Gracewood) currently being hardened, and one (Dumbfoundling) to begin hardening in 2027 as reported in FPL's 2023-2032 SPP. All four substations include installation of 10-foot above grade storm surge walls, flood gates, and additional drainage to mitigate storm surge and flooding during extreme weather. Estimated completion dates range from 2025 to 2029.

Florida Power & Light Company Substation Storm Surge/Flood Mitigation Program Mitigation Measures – Ongoing or Planned 2023-2032		
Substation	**Type**	**Estimated Completion**
Former/Legacy FPL		
Chambers*	Distribution	2025
Lewis*	Distribution	2025
Dumfoundling	Distribution	2028
Gracewood	Distribution	2029

*FPL's Northwest Region (former Gulf service area)

Table 21 *Source: FPL's Response to Commission Audit Staff's DR 4.9*

Commission audit staff notes that in FPL's 2026-2035 SPP, the Commission approved the hardening of five additional substations (Capri, Estero, Iona, Naples, and Port Orange). According to FPL, these five substations experienced flooding that caused equipment damage during recent extreme weather events with the highest water level of five feet at the Iona substation.

C. Management Oversight

According to FPL, each individual substation requires a complex and unique solution. A typical substation project may span across several years to complete from beginning to end. Every project is custom engineered in accordance with the unique conditions specific to that substation. Scope changes may affect material availability and impact overall project costs. For example, similar to FPL's St. Augustine substation, the Company's South Daytona substation and equipment was damaged by Hurricane Matthew (2016) and Irma (2017). However, the soil conditions at the South Daytona substation posed different challenges.

For its SPP substation projects, FPL uses contracted services for engineering design and contracted turnkey construction services for line work. Throughout a project, a FPL construction lead conducts regular QA/QC site visits to ensure the substation project is constructed in accordance with the drawing sets and specifications, safety standards, and conformance with Sarbanes-Oxley. Additionally, soil compaction and concrete sample tests are conducted during construction to ensure standards are met.

Upon completion of the project, a final QA/QC walkdown is performed by a FPL Civil Engineer, a contractor representative, a FPL siting project manager, the assigned FPL construction lead, and the Civil Engineer of Record for the project. The drawing sets and specifications are used to verify that the project construction adheres to the scope of work. QA/QC punch list items identified during the walkdown are documented in a letter and sent to the construction contractor for correction. After the contractor has corrected the issues, the assigned FPL construction lead performs a follow-up QA/QC walkdown and confirms items were corrected with photo documentation. To date, FPL states that there have not been any construction non-compliance

issues warranting contractor re-assignment or termination. The costs for the QA/QC inspections are recovered through the SPPCRC.

D. Analysis of Projects and Costs

Table 22 lists the ten prioritized substation projects within the legacy FPL service area identified in the Company's 2020-2029 and 2023-2032 SPPs that were prioritized for hardening against storm surge and/or flooding during extreme weather events. For the individual projects that have been completed, they were within their respective overall budget for the time period shown. However, some substation storm surge and flood mitigation projects span multiple years due to the complexity of design and field conditions.

Florida Power & Light Company
SPP Substation Storm Surge/Flood Mitigation Program
Projects and Costs – Estimated vs. Actual
2020–2023

Substation*	2020		2021		2022		2023	
	Est. Cost	Act. Cost	Est. Cost	Act. Cost	Est. Cost	Act. Cost	Est. Cost	Act. Cost
Aventura	$0	$30,187	$286,075	$263,929	$0	$2,599	$0	$0
Chambers	$0	$11,360	$33,000	$22,407	$25,000	$1,721	$0	$11,614
Corkscrew	$0	$565,151	$68,800	$273,730	$0	$23,949	$0	$0
Dumfoundling	$0	$0	$71,000	$0	$55,000	$0	$0	$0
Gracewood	$0	$12,845	$98,000	$21,333	$25,000	$35,987	$1.0M	$190,214
Lewis	$0	$0	$400,000	$18,497	$40,000	$7,660	$0	-$4
Opa Locka	$0	$166,592	$180,900	$249,823	$0	$1,851	$0	$0
Pine Ridge	$0	$108,296	$765,090	$77,707	$1.2M	$202,458	$800,000	$907,881
St. Augustine	$3M	$2.2M	$7.4M	$6.6M	$6.2M	$4.1M	$3.2M	$5.0M
So. Daytona	$0	$8,361	$658,500	$157,800	$2.4M	$170,048	$3.0M	$749,207
Total**	**$3.0M**	**$3.2M**	**$10.0M**	**$7.8M**	**$10.0M**	**$4.6M**	**$8.0M**	**$6.8M**

*All are distribution substations
**Totals include both capital and O&M costs

Table 22 *Source: FPL's Response to Commission Audit Staff's DR 4.9*

For the year 2020, $2.2 million, or 69 percent, of the $3.2 million in total costs were attributed to the engineering and planning of St. Augustine substation rebuild project. The project was initiated in 2020 with an estimated project cost of $3.0 million. The Company identified unsuitable soil conditions during the engineering stage of the project, leading to higher-than-expected costs, scope changes, and construction delays due to permitting requirements. Engineering for the other projects were accelerated to make up for the delays at the St. Augustine substation, and the resulting actuals were higher than estimated.

Like 2020, the majority of costs in 2021 (85 percent) were spent on the St. Augustine substation rebuild, $6.6 million out of a total of $7.8 million. In 2021, FPL completed the hardening of Aventura, Corkscrew, and Opa Locka substations. The variance in the estimated and actual costs for several projects was a result of schedules being adjusted for reasons such as field conditions and scope change.

Again in 2022, $4.1 million (89 percent) of $4.6 million in total costs were spent on the St. Augustine substation. According to FPL, the St. Augustine and South Daytona projects were delayed because of subsurface field conditions due to the proximity to the intercoastal waterway. For the Pine Ridge substation project, the actual costs of $202,458 were substantially lower (83 percent) than the estimated $1.2 million because the Company experienced changes in work specifications that delayed resources. For the Pine Ridge and South Daytona substations, the projects were delayed due to scope changes. FPL identified unsuitable soil conditions during its engineering stage leading to scope changes, and construction delays due to permitting requirements.

For 2023, FPL's actual costs of $6.8 million was $1.2 million (15 percent) less than the estimated $8.0 million due to project delays associated with the South Daytona substation which shifted project completion to 2024. The majority of the 2023 actual costs (87 percent) were attributable to project completion for the St Augustine and Pine Ridge substations. For the Gracewood and South Daytona substations, the projects were initially scheduled to begin construction in August 2023, but they were delayed due to scope change resulting from challenging field conditions and permitting requirements.