DUKE ENERGY
FLORIDA

Matthew R. Bernier
Associate General Counsel

January 15, 2025

VIA ELECTRONIC FILING

Adam J. Teitzman, Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: *Review of 2026-2035 Storm Protection Plan, pursuant to Rule 25-6.030, F.A.C., Duke Energy Florida, LLC;* Docket No. 20250015

Dear Mr. Teitzman:

On behalf of Duke Energy Florida, LLC ("DEF"), please find enclosed for electronic filing in the above-referenced docket:

- DEF's Petition for Approval of 2026-2035 Storm Protection Plan;
- Direct Testimony of Brian M. Lloyd with Exhibit No. (BML-1), Exhibit No.(BML-2), and Exhibit No. (BML-3);
- Direct Testimony of Christopher A. Menendez; and
- Direct Testimony of Alexandra M. Vazquez.

Thank you for your assistance in this matter. Please feel free to call me at (850) 521-1428 should you have any questions concerning this filing.

Respectfully,

/s/ Matthew R. Bernier
Matthew R. Bernier

MRB/mh
Enclosures

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Review of 2026-2035 Storm Protection Plan pursuant to Rule 25-6.030, F.A.C., by Duke Energy Florida, LLC	Docket No. 20250015-EI Dated: January 15, 2025

DUKE ENERGY FLORIDA, LLC'S
PETITION FOR APPROVAL OF 2026-2035 STORM PROTECTION PLAN

Pursuant to Section 366.096, Florida Statutes (Fla. Stat.), Rules 25-6.030 and 28-106.201, Florida Administrative Code ("FAC"), Duke Energy Florida, LLC ("DEF" or "the Company") hereby petitions this Commission for approval of its 2026-2035 Storm Protection Plan ("SPP"). In support of this Petition, DEF states the following:

1. DEF[1] is an investor-owned utility operating under the jurisdiction of the Commission pursuant to the provisions of Chapter 366, Fla. Stat. DEF's principal place of business is located at 299 1st Avenue North, St. Petersburg, Florida 33701.

2. For purposes of this Petition, DEF's address shall be that of its undersigned counsel. Any pleading, motion, notice, order, or other document required to be served upon DEF or filed by any party to this proceeding should be served upon DEF's undersigned counsel.

3. DEF serves more than 2 million retail customers in Florida. Its service area comprises approximately 20,000 square miles in 35 of the state's 67 counties, including the densely populated areas of Pinellas and western Pasco Counties and the Greater Orlando area in Orange, Osceola, and Seminole Counties.

[1] DEF is a wholly-owned subsidiary of Duke Energy Corporation ("Duke Energy").

4. In 2006, in response to the damage caused by the active 2004-2005 hurricane seasons, the Commission adopted Rule 25-6.042, F.A.C. (the "Storm Hardening Rule"). As required by the Rule, under the Commission's direction, DEF has made significant investments in storm hardening to prepare its electric system to withstand and/or quickly recover from storm damage.

5. Over the last several years, Florida has experienced active storm seasons including landfalls and near landfalls from several named storms, including multiple major storms. In response, during the 2019 legislative session, the Florida legislature passed the Storm Protection Plan Cost Recovery Statute, codified as section 366.96, Florida Statutes ("SPP Statute").

6. Pursuant to the SPP Statute, this Commission promulgated Rule 25-6.030, F.A.C. ("SPP Rule"). The SPP Rule states "[e]ach utility as defined in Section 366.96(2)(a), Fla. Stat., must file a petition with the Commission for approval of a Transmission and Distribution Storm Protection Plan (Storm Protection Plan) that covers the utility's immediate 10-year planning period." *Id.* at (1). The SPP Rule further requires that each utility file an updated SPP at least every three years. The Company filed its last SPP in 2022. *See* Order PSC-2022-0388-FOF-EI. This filing is made within the required three years, consistent with the SPP Rule, and is an update to DEF's SPP previously approved by the Commission.

7. Attached to this petition, and incorporated herein by reference, are the testimony and three exhibits of Mr. Brian M. Lloyd (Exhibit Nos. (BML-1), (BML-2) and (BML-3)), the testimony of Mrs. Alexandra M. Vazquez, who is co-sponsoring a portion of Exhibit Nos. (BML-1) and (BML-2), and the testimony of Mr. Christopher A. Menendez, who is co-sponsoring a portion of Exhibit No. (BML-1). Mr. Lloyd's three Exhibits comprise DEF's 2026-2035 SPP. These testimonies and exhibits satisfy all filing requirements of Rule 25-6.030(3), F.A.C.

8. After a utility has filed an SPP containing all of the elements required by Rule 25-6.030, F.A.C., the Commission has 180 days in which to approve, approve with modifications, or deny approval of a utility's SPP. *See* § 366.96(5), Fla. Stat. An updated plan, such as DEF's SPP, is to be reviewed using the same criteria as the initial plan. *See id.* at (6).

9. That is, the Commission should approve a utility's filed plan upon a determination that the plan is in the public interest. *Id.* at (5); *Citizens of the State of Fla. v. Fay*, 2024 Fla. LEXIS 1792 (Fla. Nov. 14, 2024). The Commission's public interest determination is guided by the factors found in subsection (4) of the SPP Statute. *See Fay*, 2024 Fla. LEXIS at *15-16. Because DEF's SPP satisfies the requirements of section 366.96(4) and the filing requirements of Rule 25-6.030(3), it should be approved as in the public interest without modification.

10. DEF is not aware of any disputed issue of material fact pertaining to the petition.

WHEREFORE, Duke Energy Florida, LLC, requests that the Commission determine the Company's 2026-2035 Storm Protection Plan is in the Public Interest and Approve it without Modification.

Respectfully submitted,

/s/ Matthew R. Bernier

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CERTIFICATE OF SERVICE
Docket No. 20250015-EI

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished to the following by electronic mail this 15th day of January, 2025, to all parties of record as indicated below.

/s/ Matthew R. Bernier
Attorney

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

REVIEW OF 2026-2035 STORM PROTECTION PLAN, PURSUANT TO RULE 25-6.030, F.A.C., DUKE ENERGY FLORIDA, LLC.

DOCKET NO. 20250015-EI

DIRECT TESTIMONY OF BRIAN M. LLOYD ON BEHALF OF DUKE ENERGY FLORIDA, LLC

JANUARY 15, 2025

I. INTRODUCTION AND QUALIFICATIONS.

Q. Please state your name and business address.

A. My name is Brian M. Lloyd. My current business address is 3250 Bonnet Creek Road, Lake Buena Vista, FL 32830.

Q. By whom are you employed and in what capacity?

A. I am employed by Duke Energy Florida, LLC ("DEF" or the "Company") as General Manager, PGO Projects.

Q. What are your responsibilities as General Manager, PGO Projects?

A. My duties and responsibilities include planning for Distribution grid upgrades, system planning, and overall Distribution asset management strategy across Duke Energy Florida, as well as the Distribution Project Management for executing the work identified. Additionally, I manage organizations that execute the subdivision and apartments developer interactions and engineer large residential developments across the DEF territory.

Q. Please summarize your educational background and work experience.

A. I have a Bachelor of Science degree in Mechanical Engineering from Clemson University and am a registered Professional Engineer in the state of Florida. Throughout my 18 years at Duke Energy, I have held various positions within Distribution ranging from Engineer to General Manager focusing on Asset Management, Asset Planning, Distribution Design, and Project Management. My current position is General Manager of PGO Projects for Power Grid Operations.

II. PURPOSE AND SUMMARY OF TESTIMONY.

Q. What is the purpose of your direct testimony?

A. The purpose of my direct testimony is to provide and support the Company's Storm Protection Plan 2026-2035 ("SPP 2026"). The SPP 2026 is consistent with and complies with all the requirements of both Section 366.96, Florida Statutes ("SPP statute"), and Rule 25-6.030, F.A.C. ("SPP rule"). My testimony will show that DEF's SPP 2026 utilizes the same analysis methodology and ultimately carries forward the same Programs from the most-recently approved Storm Protection Plan, the 2023-2032 Storm Protection Plan ("SPP 2023"). The results of this analysis are presented in DEF's SPP 2026, which is attached to my testimony.

Q. Do you have any exhibits to your testimony?

A. Yes, I am sponsoring the following exhibits to my testimony:

- Exhibit No. (BML-1), DEF SPP Program Descriptions;
- Exhibit No. (BML-2), DEF SPP Support; and
- Exhibit No. (BML-3), DEF Service Area

Exhibits BML-1 and BML-3 were prepared by the Company under my direction, while BML-2 was prepared by Guidehouse, Inc., with input from the Company, and they are all true and correct to the best of my information and belief. Mrs. Alexandra M. Vazquez is co-sponsoring the Transmission Programs portion of Exhibit No. (BML-1), the Transmission Programs portion of Exhibit No. (BML-2), and the Transmission customers portion of Exhibit No. (BML-3). Mr. Christopher A. Menendez is co-sponsoring the Revenue Requirements and Rate Impacts component of Exhibit No. (BML-1).

Q. Please summarize your testimony.

A. My testimony presents DEF's Storm Protection Plan for the planning period of 2026 through 2035 and shows that DEF's SPP 2026 meets the requirements of both the SPP statute and rule. As directed by the Legislature, the SPP 2026 is designed to cost-effectively "strengthen [the Company's] infrastructure to withstand extreme weather conditions by promoting overhead hardening of electrical transmission and distribution facilities, the undergrounding of certain electrical distribution lines, and vegetation management." DEF's SPP 2026 is built upon the previously approved DEF SPP 2020 and SPP 2023, taking into consideration updated reliability, asset, storm, and cost data.

III. OVERVIEW OF SPP 2026

Q. How did DEF approach the development of the SPP?

A. SPP 2026 was developed in a similar manner as the previously approved SPP 2020 and SPP 2023 by building a cross functional team of Company experts from various business functions, many that were directly involved in DEF's previous SPPs and by utilizing the professional services of Guidehouse to provide modeling and analysis support. Much like the DEF team, many of the Guidehouse experts were key participants in the formation of SPP 2020 and SPP 2023. The Guidehouse experts' deep level of industry experience in the Distribution and Transmission systems, climate resilience, risk mitigation, benefits-cost analysis, and predictive analytical techniques provide the expert support necessary to build a comprehensive Storm Protection Plan that meets the requirements of the SPP statute and rule. Guidehouse's previous experience with both SPP 2020 and SPP 2023 made for an efficient start-up process and provided continuity between the three iterations of the Plan.

Q. Please describe how the SPP is organized.

A. DEF's SPP 2026 is attached as three Exhibits. As required by Rule 25-6.030, Exhibit No. (BML-1) includes a summary of each Program included in SPP 2026;

estimated spend and units for the first three years of implementation (2026 to 2028); detailed information for the first-year projects (2026); vegetation management information; and the estimated benefits. Exhibit No. (BML-2) is a write-up of the prioritization methodology and estimated Program benefits. A map of DEF's service area with associated customer count is provided in Exhibit No. (BML-3).

Q. Has DEF determined that there are any areas of its service territory that Storm Protection Plan projects would not be feasible, reasonable, or practical?

A. No, DEF has not determined there are any areas of its service territory in which it would not be feasible, reasonable, or practical to execute SPP projects.

IV. OVERVIEW OF PROGRAMS EVALUATED IN THE SPP

Q. Are the Programs in SPP 2026 the same as SPP 2023?

A. Yes, the DEF and Guidehouse teams selected the same portfolio of Programs for SPP 2026 as the previously approved SPP 2023. These nine Programs are tried, true and built from DEF's and Guidehouse's experience. The nine Programs are: Distribution Feeder Hardening; Distribution Lateral Hardening; Distribution Self-Optimizing Grid; Distribution Underground Flood Mitigation; Transmission Structure Hardening; Transmission Substation Flood Mitigation; Transmission Substation Hardening; Distribution Vegetation Management; and Transmission Vegetation Management. Detailed descriptions of these Programs can be found in Exhibit No. (BML-1).

Q. How did DEF develop the list of Programs for the SPP?

A. As mentioned above, DEF first started with the existing SPP 2023 Programs and sub-programs. These Programs are a combination of those that were previously included in DEF's Storm Hardening Plans (under the since repealed Storm Hardening rule) and those that were developed by internal subject matter experts to meet the requirements of the SPP rule and statute. Then, subject matter experts ("SMEs") with knowledge of the Transmission and Distribution systems and asset performance evaluated whether any new system performance trends were observed that would meet the intent and requirements of Section 366.096, Florida Statutes and Rule 25-6.030, F.A.C. A complete list of the Program names and descriptions selected for inclusion in SPP 2026 can be found in Exhibit No. (BML-1).

Q. Are there any new Programs included in DEF's SPP 2026 when compared to DEF's approved SPP 2023?

A. No.

Q. Are there any new Subprograms contained in DEF's SPP 2026 continuing Programs?

A. Yes. DEF is proposing to include Insulator Upgrades within the Transmission Structure Hardening Program. Mrs. Alexandra M. Vazquez discusses this Subprogram in her testimony.

Q. Are any Programs or Subprograms completing deployment within the SPP 2026 10-Year planning period?

A. Yes. As discussed in Mrs. Vazquez's testimony, DEF expects to complete its Transmission Wood Pole Replacements subprogram during this planning period. DEF also expects to reach the originally planned saturation goal of 80% deployment of the Self-Optimizing Grid Program during the planning horizon. However, the team is continuing to evaluate data from the 2024 storm season and DEF believes there may be additional value to be gained from continuing the Program to a greater portion of the distribution system.

Q. Are there other potential Programs or Subprograms that DEF may consider in the future for inclusion in the SPP?

A. Yes, DEF will continue to monitor emergent technologies and other asset hardening opportunities informed by post-storm forensic studies that may warrant further review and consideration. For example, DEF assets were heavily impacted by 2024's trio of significant storms in Debby, Helene and Milton, but the results from the post storm forensics have not been evaluated for the purposes of informing DEF's SPP. DEF will also continue to assess its proposed deployment of its current Programs and Subprograms to ensure customers are served most effectively by those investments, such as potentially continuing the Self-Optimizing Grid beyond 80% of DEF's feeders as alluded to above.

V. PROGRAM EVALUATION, PRIORITIZATION, AND SELECTION

Q. Are there differences in program evaluation and prioritization between SPP 2026 and SPP 2023?

A. Yes. Similar to the development of SPP 2020 and SPP 2023, DEF provided Guidehouse with asset, outage, project costs, and storm damage cost data sets to support the Program evaluation and prioritization. These data sets were updated with information through 2023. As part of the refinement process from SPP 2023 to SPP 2026, DEF and Guidehouse updated values and model details such as asset location data, outage information and others which resulted in an enhanced model.

Q. Are there differences in how Programs were analyzed within the Guidehouse model?

A. No, the same analysis was performed by Guidehouse for SPP 2026 as SPP 2023. For each Program, Guidehouse estimated a reduction in storm damage and outage duration, using CMI as a proxy for duration, for each possible project location. The model enables DEF to prioritize the work over the life of the Program based on performing the highest benefit work first. As discussed in more detail in Exhibit No. (BML-2), the Guidehouse model prioritized work by looking at the probability of damage to particular assets (including consideration of information from various FEMA-produced models) and the consequences of that damage, including for example the number and/or type of customers served by particular assets. That information was then evaluated by DEF subject matter experts in the Distribution and Transmission functions for further analysis and prioritization.

Q. How did the DEF Distribution subject matter experts select the specific targets for implementation in 2026?

A. DEF's Distribution subject matter experts utilized the Guidehouse benefits-to-cost prioritized list of projects to select the highest ranked project. For the Feeder Hardening program and Lateral Hardening Overhead subprogram, DEF subject matter experts then evaluated other projects served from the same substation bank to determine if there were any opportunities with deployment years within the next three to five years. If a project or projects served by a substation bank met this criteria, DEF selected those projects to execute with the initiating target which allows DEF engineering, project management, and construction resources to work more efficiently and reduce overall construction driven disturbance duration to the customers in the area. That is; by grouping together qualifying projects from a particular substation bank, DEF aims to minimize any necessary work-related outages and reduce costs through the efficient use of resources. Other projects are worked individually and are not grouped with other projects. DEF notes that it is always working to identify efficiencies and other available means to lower costs related to all Programs. If efficiencies can be identified and costs lowered, those lower costs may allow for DEF to identify and complete additional Program scope within the Planning horizon.

Q. Does DEF believe there are any implementation alternatives that could mitigate the resulting rate impact for each of the first three years of the proposed Storm Protection Plan?

A. No, DEF does not believe there are any implementation alternatives that could mitigate the rate impact without negatively impacting the benefits the SPP 2026 is designed to deliver. In order to mitigate rate impact, SPP 2026 would need to be reduced or delayed which would result in a reduction or delay of the benefits.

VI. BENEFITS THAT DEF'S SPP IS INTENDED TO BRING TO DEF'S CUSTOMERS

Q. What benefits does DEF believe its proposed SPP 2026 will provide its customers?

A. As mentioned above, DEF proposes to implement the activities included in Exhibit No. (BML-1). While DEF agrees with the Commission's recognition that "[n]o amount of preparation can eliminate outages in extreme weather events,"[1] DEF is confident that the activities included in this Plan will strengthen its infrastructure, reduce outage times associated with extreme weather events, reduce restoration costs, and improve overall service reliability.

[1] *See Review of Electric Utility Hurricane Preparedness and Restoration Actions,* Docket No. 20170215-EU, p. 6.

Q. Has DEF experienced extreme weather events since it began deployment of SPP 2020 and SPP 2023 Programs?

A. Yes. DEF had the following named storms impact its service territory and customers: Hurricanes Ian and Nicole in 2022; Hurricane Idalia in 2023, Hurricane Debby in August 2024, Hurricane Helene in September 2024 and most recently, Hurricane Milton in October 2024.

Q. Has DEF reviewed how its distribution storm hardened assets performed during the hurricanes mentioned above?

A. Yes. Immediately following an extreme weather event, forensic damage assessment teams are dispatched to a subset of DEF's storm hardened assets to review how the assets performed under the extreme conditions. These inspections have identified that the hardening efforts are effective as no hardened assets have been identified as damaged due to the storms. Additionally, DEF assesses a sample of all distribution poles that are damaged during an extreme weather event to determine if there are opportunities in DEF's hardening and maintenance programs. These forensic assessments are then analyzed by an outside consultant to look for trends or risks and, for the storms with completed reports, initial forensic analyses have shown thus far that the sampled distribution storm hardened assets have performed as intended during these extreme weather events.

DEF's Self-Optimizing Grid investments have helped Florida customers avoid over half a billion minutes of interruptions during the extreme weather events mentioned above, covering just three years (2022-2024). The approximate avoided customer minutes of interruption (CMI) attributable to SOG by named storm are:

Storm	CMI Avoided
Ian	196 million
Nicole	13 million
Idalia	8 million
Debby	13 million
Helene	100 million
Milton	220 million

Mrs. Vazquez discusses the transmission hardened asset performance in her testimony, but overall, as demonstrated above, DEF's ongoing preparedness practices and SPP investments continue to contribute to excellence in restoration following hurricanes and other major events.

Q. Does this conclude your testimony?

A. Yes, it does.

DUKE ENERGY FLORIDA

Storm Protection Plan

Program Descriptions

CONTENTS

PROGRAM DESCRIPTIONS

The following sections of this document describe each of Duke Energy Florida's ("DEF") Storm Protection Plan ("SPP") Programs. This exhibit includes the Program vision, description, costs, and estimated benefits from completion of the Program.

Note: Shifts of scope may occur between years to optimize benefits delivery to customers and execution efficiencies.

At the Commission's direction and under its supervision, DEF has engaged in significant storm hardening activities since the 2006 adoption of the Storm Hardening Rule (Rule 25-6.0342, F.A.C., since repealed, due to the adoption of § 366.96, Fla. Stat., and subsequent adoption of Rule 25-6.030, F.A.C.). After the 2016-2017 storm seasons, the Commission initiated its "Review of Florida's Electric Utility Hurricane Preparedness and Restoration Actions 2018"[1] to evaluate the efficacy of the approximately 12 years of hardening efforts. As a result of the analysis performed in that docket, the Commission determined that "Florida's aggressive storm hardening programs are working."[2] This conclusion was borne out by several observations: the length of outages from the 2016-2017 storm season was reduced markedly from the 2004-2005 storm season, hardened overhead distribution facilities performed better than non-hardened facilities, and underground facilities performed much better than overhead facilities.[3]

DEF agrees with the Commission's determination. In recognition of the efficacy of the storm hardening plans implemented since 2006, DEF's initial SPP ("SPP 2020") as well as its second SPP ("SPP 2023") carried on the storm hardening work included in the Company's 2019-2021 Storm Hardening Plan ("SHP"); as such, the programs that were carried over from the SHP into the SPP are the very programs the Commission has previously acknowledged "are grounded in substantive strengthening and protection of the utility's electric facilities. Programs include tree trimming, pole inspections, hardening of feeders and laterals, and undergrounding."[4] DEF's current SPP ("SPP 2026") will continue these programs and build upon them, adding incremental investment over the life of the Plan. DEF will also continue researching and investigating additional technologies and programs.

That said, DEF also agrees with the Commission's recognition that "[n]o amount of preparation can eliminate outages in extreme weather events"[5] so while DEF's Plan is designed with an eye toward strengthening the system and reducing outages and outage duration, it must be understood that there is no panacea, and individual storms will produce unique challenges.

[1] *Review of electric utility hurricane preparedness and restoration actions,* Docket No. 20170215-EU.
[2] *Id.* at p. 1.
[3] *See id.* at pp. 2-3.
[4] *See id.* at p. 9.
[5] *Id.* at p. 6.

Distribution Programs

Program Summaries

Feeder Hardening

Vision

Feeder Hardening is a long-term program that will systematically upgrade the feeder backbone to meet the National Electric Safety Code ("NESC") 250C extreme wind load standard. The existing backbone is approximately 6,500 miles on over 1,300 feeders. The Feeder Hardening Program began in 2021 and is estimated to take approximately 50 years to complete. At completion, all feeder miles will be hardened.

Description

The Feeder Hardening program will enable the feeder backbone to better withstand extreme weather events. This includes strengthening structures, updating basic insulation level ("BIL") to current standards, updating conductor to current standards, relocating difficult to access facilities, relocating or undergrounding facilities to address clearance encroachments, replacing oil filled equipment as appropriate, and incorporates the Company's pole inspection and replacement activities.

Figure 1: Distribution feeder poles broken by straight line winds from Category 3 hurricane.

Structure Strengthening

Structure strengthening includes upgrading existing poles and other facilities as necessary to align with the NESC 250C extreme wind load standard. For example, a stronger pole class reduces the extent of damage incurred on feeder lines during extreme wind events. Other related hardware upgrades will occur simultaneously, such as insulators, crossarms, support brackets, and guys.

Figure 2: Hardened distribution feeder including structures that have been strengthened to the NESC 250C standard and increased BIL from hardware and spacing upgrades.

BIL

While upgrading feeders to the extreme wind load standard, the Company will also upgrade the BIL to further harden the system. Upgrading the BIL involves framing for more space between phases, more wood material between insulator mounting points, application of the larger standard insulator sizes, and moving arresters to the lowest level of the primary space.

Conductor Upgrades

As part of Feeder Hardening, DEF will replace any deteriorated or undersized conductor on the feeder backbone. This conductor is more susceptible to storm damage. It will be replaced with our current standard conductor.

Relocating Difficult to Access Facilities

Where practical, feeder sections that traverse hard to access areas, such as wetlands, will be relocated to truck-accessible routes. These line sections often suffer damage in extreme wind load events and, due to their location, are among the most expensive and longest to restore outages.

Relocating or Undergrounding Facilities to Address Clearance Encroachments

While upgrading feeders to the extreme wind load standards, the Company will review clearances with non-company owned structures and assets to determine if there will be adequate clearances with the proposed, hardened structures. If inadequate, the Company will relocate the facilities or install underground facilities where necessary.

Replacing Oil-Filled Equipment

While working to upgrade each feeder, hydraulic (oil-filled) reclosers will be upgraded to electronic reclosers (vacuum interrupters) with communications and remote Supervisory Control and Data Acquisition ("SCADA") control capability, as available. Electronic reclosers enable remote visibility and control. Real-time operational information is remotely available, such as current per phase, voltage per phase, var flow per phase, health condition of the device, on-board battery health, fault information, and interrupter status by phase. This real-time data will help target restoration efforts helping to reduce outage durations. Additionally, these oil-filled devices can cause negative environmental impacts. Electronic reclosers are vacuum interruption devices and have no internal oil.

Figure 3: SCADA enabled Electronic Recloser

Pole Inspection and Replacement

Per Commission Order No. PSC-2006-0144-PAA-EI, pole inspection is performed on an 8-year cycle. These inspections determine the extent of pole decay and any associated loss of strength. The information gathered from these inspections is used to determine pole replacements and to effectuate the extension of pole life through treatment and reinforcement.

Cost

It is expected that the 10-year cost will be approximately $2.2B Capital and $8M O&M. This would cover approximately 1,400 miles of feeder hardening and costs of the pole inspection and replacement activities.

	DEF		
Feeder Hardening	**2026**	**2027**	**2028**
Totals	**$164,524,855**	**$220,865,806**	**$230,882,047**
Feeder Hardening	$138,002,655	$193,992,300	$201,603,828
Capital	$137,894,505	$193,840,272	$201,445,836
O&M	$ 108,150	$ 152,028	$ 157,992
Total Units	105	144	146
Pole Inspection/Replacement	$ 26,522,200	$ 26,873,506	$ 29,278,219
Capital	$ 25,898,725	$ 26,248,000	$ 28,646,163
O&M	$ 623,475	$ 625,506	$ 632,056
Total Units	2,275	2,250	2,400

Cost Benefit Comparison

As provided in the Cost section above, the estimated cost for DEF's Feeder Hardening Program during the 10-year planning horizon is approximately $2.2B Capital and $8M O&M.

After deployment of the 2026-2035 Feeder Hardening Program work is complete, DEF estimates it will reduce the cost of extreme weather events on the Distribution system by approximately $7.6M to $9.5M annually based on today's costs.

After deployment of the 2026-2035 Feeder Hardening Program work, DEF estimates it will reduce Distribution MED Customer Minutes Interrupted ("CMI") by approximately 20 million to 25 million minutes annually. CMI reduction is used as a proxy for reduction in extreme weather event duration for the average customer.

Prioritization Methodology

Work will be prioritized using the following process.

1. Probability of Damage: To prioritize the work in the Florida regions, the Transmission and Distribution systems were modeled, and weather simulations were run to provide probabilistic exposure frequency for all asset locations. The weather modeling uses the FEMA Hazus and Sea, Lake, and Overland Surges from Hurricanes ("SLOSH") models, which contain the weather data for storms over the last 200 years. Using the geographical locations of the Florida assets and the historic storm paths embedded in the Hazus model, a spatial correlation of future storm exposure can be derived. To determine probability of damage given that exposure, eight years of historical outage data was provided and correlated with the closest weather tower to determine the conditions during historic failures recorded in the outage data. Then, the expected quantities of asset failure for simulated future weather exposure conditions was derived by combining simulated weather patterns with historical asset failure through conditional probability methods.
2. Consequence of Damage: Once the output of probabilistic damage is assessed, the probable impact to customers is considered. This step considers the number of customers served by a given asset (e.g., each pole, or segment of conductor on a feeder), observed outage durations, the mix of customers, and critical facilities. This step is performed both for the existing

configuration of each feeder and the hardened configuration resulting from the particular program. The difference between the existing condition and the hardened configuration is the program impact.

3. Distribution subject matter experts then use these outputs to determine the optimum deployment plan considering factors such as current projects in the area, critical customers, operational knowledge, resource availability and efficiency.

Year 1 Project List

DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS - FEEDER HARDENING

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
ALTAMONTE_BANK01 - M572	4.16	1,856	5,463,249	4,285	1/2/2026	6/30/2027
ALTAMONTE_BANK02 - M578	4.44	1,809	5,830,968	4,573	1/2/2026	9/30/2027
ALTAMONTE_BANK02 - M579	3.8	2,079	4,990,468	3,914	1/2/2026	12/15/2026
BAYBORO SOUTH_BANK01 - X9	4.11	2,347	5,397,585	4,233	1/2/2026	12/15/2026
BAYBORO SOUTH_BANK01 - X21	5.02	2,623	6,592,671	5,171	1/2/2026	12/15/2026
EAST CLEARWATER_BANK01 - C901	1.8	1,314	2,363,906	1,854	1/2/2026	12/15/2026
EATONVILLE_BANK03 - M1139	4.96	1,631	6,513,874	5,109	1/2/2026	3/31/2027
HAINES CITY_BANK01 - K18	4.12	1,892	5,410,718	4,244	1/2/2026	12/15/2026
HAINES CITY_BANK01 - K21	5.8	3,330	7,617,030	5,974	1/2/2026	12/15/2027
HAINES CITY_BANK02 - K16	4.39	1,046	5,765,304	4,522	1/2/2026	9/30/2027
HAINES CITY_BANK02 - K17	6.12	2,527	8,037,280	6,304	1/2/2026	12/15/2027
JASPER SOUTH_BANK02 - N192	3.1	1,037	4,071,171	3,193	1/2/2026	12/15/2026
JASPER SOUTH_BANK02 - N191	4	850	5,253,124	4,120	1/2/2026	3/31/2027
KELLER ROAD_BANK01 - M3	0.12	50	157,594	124	1/2/2026	12/15/2026
LAKE BRYAN_BANK02 - K239	1.02	907	1,339,547	1,051	1/2/2026	12/15/2026
LAKE BRYAN_BANK03 - K230	0.19	32	249,523	196	1/2/2026	12/15/2026
LAKE PLACID_BANK01 - K758	5.41	1,398	7,104,850	5,572	1/2/2026	12/15/2026
LAKE PLACID_BANK01 - K757	4.97	995	6,527,007	5,119	1/2/2026	9/30/2027
LAKE PLACID_BANK02 - K1066	4.09	1,457	5,371,319	4,213	1/2/2026	6/30/2027
MADISON_BANK02 - N1	5.96	1,225	7,827,155	6,139	1/2/2026	12/15/2027
SILVER SPRINGS SHORES_BANK02 - A128	1.3	25	1,707,265	1,339	1/2/2026	12/15/2026
SIXTEENTH STREET_BANK01 - X45	3.8	2,071	4,990,468	3,914	1/2/2026	12/15/2026
SIXTEENTH STREET_BANK02 - X46	3.86	2,836	5,069,265	3,976	1/2/2026	12/15/2026
SUN N LAKES_BANK02 - K1137	1.99	33	2,613,429	2,050	1/2/2026	12/15/2026
SUNFLOWER_BANK01 - W0470	1.2	2,087	1,575,937	1,236	1/2/2026	12/15/2026
UCF_BANK01 - W1013	1.56	988	2,048,718	1,607	1/2/2026	12/15/2026
MAXIMO_BANK03 - X142	2.03	2,621	2,665,960	2,091	1/2/2026	12/15/2026
DUNEDIN - C102	2.34	1,606	3,073,078	2,410	1/2/2026	12/15/2026
FORTIETH STREET_BANK02 - X84	2.81	2,181	3,690,320	2,894	1/2/2026	12/15/2026
FORTIETH STREET_BANK02 - X85	3.09	1,045	4,058,038	3,183	1/2/2026	12/15/2026
LARGO - J406	3.44	2042	4,517,681	3,543	1/2/2026	12/15/2026

Pole inspections and replacements benefit the entire distribution system. These annual programs are completed on a cycle-basis. As such, these SPP programs do not lend themselves to identification of specific project locations. A Year 1 Project List has been provided at the Operations Center level.

DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS - FEEDER HARDENING POLE REPLACEMENTS

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
BUENA VISTA	159	158,538	1,767,921	1,431	1/2/2026	12/15/2026
CLEARWATER	320	148,422	3,558,080	2,880	1/2/2026	12/15/2026
DELAND	263	91,841	2,924,297	2,367	1/2/2026	12/15/2026
HIGHLANDS	27	57,774	300,213	243	1/2/2026	12/15/2026
JAMESTOWN	14	146,108	155,666	126	1/2/2026	12/15/2026
LAKE WALES	363	148,811	4,036,197	3,267	1/2/2026	12/15/2026
LONGWOOD	54	96,080	600,426	486	1/2/2026	12/15/2026
MONTICELLO	301	60,125	3,346,819	2,709	1/2/2026	12/15/2026
OCALA	298	94,307	3,313,462	2,682	1/2/2026	12/15/2026
SE ORLANDO	55	102,974	611,545	495	1/2/2026	12/15/2026
ST. PETERSBURG	27	183,237	300,213	243	1/2/2026	12/15/2026
WALSINGHAM	231	155,414	2,568,489	2,079	1/2/2026	12/15/2026
WINTER GARDEN	163	91,089	1,812,397	1,467	1/2/2026	12/15/2026

DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS - FEEDER HARDENING POLE INSPECTIONS

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
BUENA VISTA	1,051	158,538	42,040	42,040	1/2/2026	12/15/2026
CLEARWATER	2122	148,422	84,880	84,880	1/2/2026	12/15/2026
DELAND	1743	91,841	69,720	69,720	1/2/2026	12/15/2026
HIGHLANDS	178	57,774	7,120	7,120	1/2/2026	12/15/2026
JAMESTOWN	90	146,108	3,600	3,600	1/2/2026	12/15/2026
LAKE WALES	2405	148,811	96,200	96,200	1/2/2026	12/15/2026
LONGWOOD	355	96,080	14,200	14,200	1/2/2026	12/15/2026
MONTICELLO	1996	60,125	79,840	79,840	1/2/2026	12/15/2026
OCALA	1973	94,307	78,920	78,920	1/2/2026	12/15/2026
SE ORLANDO	366	102,974	14,640	14,640	1/2/2026	12/15/2026
ST. PETERSBURG	180	183,237	7,200	7,200	1/2/2026	12/15/2026
WALSINGHAM	1531	155,414	61,240	61,240	1/2/2026	12/15/2026
WINTER GARDEN	1085	91,089	43,400	43,400	1/2/2026	12/15/2026

Lateral Hardening

Vision

Lateral Hardening is a long-term Program that will systematically upgrade and harden branch line sections fed by the feeder backbone. There will be two main approaches, undergrounding and overhead hardening. The existing lateral system is approximately 12,000 miles. The Lateral Hardening Program began in 2022 and is estimated to take 70 years to complete. At completion, approximately all lateral miles will be hardened.

Description

The Lateral Hardening Program will enable branch lines to better withstand extreme weather events. This will include undergrounding of the laterals most prone to damage during extreme weather events and overhead hardening of those laterals less prone to damage.

Lateral Undergrounding

Lateral segments that are most prone to damage resulting in outages during extreme weather events will be placed underground. Doing so will greatly reduce both damage costs and outage duration for DEF customers. Lateral Undergrounding focuses on branch lines that historically experience the most outage events, contain assets of greater vintage, are susceptible to damage from vegetation, and/or often have facilities that are inaccessible to trucks. These branch lines will be replaced with a modern, updated, and standard underground design of today.

Figure 1: An example of residential customers that would be candidates for Undergrounding due to section of line and service in heavily vegetated areas.

Figure 2: Section of lines that runs through backlot and heavily vegetated areas that is a candidate for Undergrounding.

Lateral Hardening Overhead

The overhead hardening strategy includes structure strengthening, deteriorated conductor replacement, removing open secondary wires, replacing fuses with automated line devices, pole replacement (when needed), line relocation, and/or hazard tree removal.

Figure 3: The teal tap line branches off the main road through an open lot to side streets where it splits again. It serves a few customers with minimal, to no vegetation. The street view is a view of the red line where there are no vegetation concerns.

Structure Strengthening

Structure Strengthening includes upgrading existing poles and other facilities as necessary to align with the NESC 250C extreme wind loading standard. For example, a stronger pole class reduces the extent of damage incurred on lateral lines during extreme wind events. Other related hardware upgrades will occur simultaneously, such as installation of insulators, crossarms, support brackets, and guys.

Conductor Upgrades

As part of Lateral Hardening Overhead, DEF will replace any deteriorated or undersized conductor on the lateral. This conductor is more susceptible to storm damage. It will be replaced with our current standard conductor.

Upgrade Open Wire Secondary

Removing the open secondary wire will mitigate outages during extreme weather conditions. This activity will eliminate an older design standard that is susceptible to wires contacting vegetation and debris. Modern triplex cable will be installed to replace the open wire secondary.

Figure 4: Three examples of open wire secondary that will be addressed.

Fusing

DEF will replace current one-time use fuses with automated line devices ("ALD"), which are small vacuum reclosers, to improve lateral performance in extreme weather events. ALDs use current fuse holders and do not generally require pole reframing. The reclosing capability inherent in the ALD will reduce outage events for downstream customers. ALDs will also serve as the temporary fault clearing device, thus reducing momentary interruptions for customers upstream on the feeder.

Line Relocation

Where practical, lateral line sections that traverse hard to access areas, such as wetlands, will be relocated to truck accessible routes. These line sections often suffer damage in extreme wind load events, and due to their location are among the most expensive to repair and take the longest to restore to service from an outage.

Hazard Tree

During the upgrade process DEF will identify hazard trees in the area surrounding the lateral requiring remediation. A hazard tree is a tree that is dead, structurally unsound, dying, diseased, leaning, or otherwise in a condition that is likely to result in striking electrical lines or other assets. Once identified, hazard trees are assigned to a contractor for remediation. When hazard trees are located in areas where DEF does not have the legal right to mitigate the danger, DEF or its contractor will work with the property owner to gain access and remediate.

Pole Inspection and Replacement

Per Commission Order No. PSC-2006-0144-PAA-EI, pole inspection is performed on an 8-year cycle. These inspections determine the extent of pole decay and any associated loss of strength. The information gathered from these inspections is used to determine pole replacements and to effectuate the extension of pole life through treatment and reinforcement.

Cost

It is expected that the 10-year cost will be approximately $2.9B Capital and $26M O&M. This would cover approximately 500 miles of Lateral Hardening Underground, approximately 800 miles of Lateral Hardening Overhead, and costs of the pole inspection and replacement activities.

	DEF		
Lateral Hardening	**2026**	**2027**	**2028**
Totals	**$249,945,453**	**$304,823,403**	**$298,710,167**
Lateral Hardening	$ 188,454,733	$ 236,039,609	$ 222,945,192
Capital	$ 187,830,707	$ 235,214,477	$ 222,169,926
O&M	$ 624,026	$ 825,132	$ 775,266
Total Units	122	142	132
Pole Inspection/Replacement	$ 61,490,720	$ 68,783,794	$ 75,764,975
Capital	$ 59,853,560	$ 67,131,750	$ 74,067,375
O&M	$ 1,637,160	$ 1,652,044	$ 1,697,600
Total Units	5,240	5,750	6,200

Cost Benefit Comparison

As provided in the Cost section above, the estimated cost for DEF's Lateral Hardening Program during the 10-year planning horizon is approximately $2.9B Capital and $26M O&M.

After deployment of the 2026-2035 Lateral Hardening Program work, DEF estimates it will reduce the cost of extreme weather events on the Distribution system by approximately $19.5M to $24.4M annually based on today's costs.

After deployment of the 2026-2035 Lateral Hardening Program work, DEF estimates it will reduce Distribution MED CMI by approximately 152 million to 190 million minutes annually. CMI reduction is used as a proxy for reduction in extreme weather event duration for the average customer.

Prioritization Methodology

The following steps are used to prioritize the work:

1. Probability of Damage: To prioritize the work in the Florida regions, the Transmission and Distribution systems were modeled, and weather simulations were run to provide probabilistic exposure frequency for all asset locations. The weather modeling uses the FEMA Hazus and SLOSH models, which contain the weather data for storms over the last 200 years. Using the geographical locations of the Florida assets and the historic storm paths embedded in the Hazus model, a spatial correlation of future storm exposure can be derived. To determine probability of damage given that exposure, eight years of historical outage data was provided and correlated with the closest weather tower to determine the conditions during historic failures recorded in the outage data. Then, the expected quantities of asset failure for simulated future weather exposure conditions was derived by combining simulated weather patterns with historical asset failure through conditional probability methods.
2. Consequence of Damage: Once the output of probabilistic damage is assessed, the probable impact to customers is considered. This step considers number of customers served by a given asset (e.g. each pole, or segment of conductor on a feeder), observed outage durations, the mix of customers, and critical facilities. This step is performed both for the existing configuration of each feeder, and the hardened configuration resulting from the particular

program. The difference between the existing condition and the hardened configuration is the program impact.

3. Distribution subject matter experts then use these outputs to determine the optimum deployment plan considering factors such as current projects in the area, critical customers, operational knowledge, resource availability and efficiency.

Year 1 Project List

DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS - LATERAL HARDENING OVERHEAD

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
ALTAMONTE_BANK01 - M572	3.94	1,856	3,684,121	2,888	1/2/2026	12/15/2026
ALTAMONTE_BANK01 - M573	2.16	685	2,019,721	1,583	1/2/2026	12/15/2026
ALTAMONTE_BANK02 - M578	5.26	1,809	4,918,395	3,856	1/2/2026	3/31/2027
ALTAMONTE_BANK02 - M575	0.28	324	261,816	205	1/2/2026	12/15/2026
BAY RIDGE_BANK01 - M453	5.58	1,675	5,217,612	4,090	1/2/2026	12/15/2027
BAYBORO SOUTH_BANK01 - X9	5.52	2,347	5,161,509	4,046	1/2/2026	3/31/2027
BAYBORO SOUTH_BANK01 - X21	5.39	2,623	5,039,952	3,951	1/2/2026	3/31/2027
BEACON HILL_BANK02 - N527	4.01	1,563	3,749,575	2,939	1/2/2026	12/15/2026
BEACON HILL_BANK02 - N515	0.91	458	850,901	667	1/2/2026	12/15/2026
EAST CLEARWATER_BANK01 - C901	0.18	1,314	168,310	132	1/2/2026	12/15/2026
EATONVILLE_BANK03 - M1138	3.62	471	3,384,903	2,653	1/2/2026	12/15/2026
FERN PARK_BANK01 - M907	1.1	1,292	1,028,562	806	1/2/2026	12/15/2026
FERN PARK_BANK01 - M909	2.08	793	1,944,916	1,525	1/2/2026	12/15/2026
HAINES CITY_BANK01 - K18	2.23	1,892	2,085,175	1,635	1/2/2026	12/15/2026
HAINES CITY_BANK02 - K16	0.55	1,046	514,281	403	1/2/2026	12/15/2026
LAKE BRYAN_BANK02 - K238	0.1	902	93,506	73	1/2/2026	12/15/2026
LAKE BRYAN_BANK02 - K244	0.55	2,402	514,281	403	1/2/2026	12/15/2026
LAKE PLACID_BANK01 - K758	3.23	1,398	3,020,231	2,368	1/2/2026	12/15/2026
LAKE PLACID_BANK02 - K1066	4.52	1,457	4,226,453	3,313	1/2/2026	12/15/2026
SILVER SPRINGS SHORES_BANK02 - A128	1.54	25	1,439,986	1,129	1/2/2026	12/15/2026
SIXTEENTH STREET_BANK01 - X43	1.71	1,328	1,598,946	1,253	1/2/2026	12/15/2026
SUN N LAKES_BANK02 - K1137	0.35	33	327,270	257	1/2/2026	12/15/2026
UCF_BANK01 - W1012	1.13	2,486	1,056,613	828	1/2/2026	12/15/2026
ULMERTON WEST_BANK01 - J680	1.95	695	1,823,359	1,429	1/2/2026	12/15/2026
MAXIMO_BANK03 - X142	1.7	2,621	1,589,595	1,246	1/2/2026	12/15/2026
DUNEDIN - C102	3.43	1,606	3,207,242	2,514	1/2/2026	12/15/2026
FORTIETH STREET_BANK02 - X84	5.92	2,181	5,535,532	4,339	1/2/2026	9/30/2027
FORTIETH STREET_BANK02 - X85	5.01	1,045	4,684,631	3,672	1/2/2026	12/15/2026
LARGO - J406	3.05	2,042	2,851,923	2,236	1/2/2026	12/15/2026

DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS - LATERAL HARDENING UNDERGROUND

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
DELAND - W0805	1.08	1,269	2,779,953	13,622	7/12/2022	5/31/2028

DELAND - W0806	0.85	1,624	2,187,926	10,721	1/6/2023	5/31/2028
DELAND - W0807	1.18	1,449	3,037,357	14,883	5/17/2022	5/31/2028
DELAND - W0808	0.23	1,829	592,027	2,901	7/25/2022	5/31/2028
DELAND - W0809	0.67	891	1,724,601	8,451	2/15/2024	5/31/2028
DELAND EAST - W1103	0.07	1,710	180,182	883	6/8/2022	3/31/2026
DELAND EAST - W1105	0.18	1,297	463,326	2,270	11/21/2022	3/31/2026
DELAND EAST - W1109	0.03	759	77,221	378	11/21/2022	3/31/2026
MAITLAND - PHASE 2 - W0079	1.02	1,269	2,625,512	12,865	7/31/2023	9/2/2029
MAITLAND - PHASE 2 - M80	1.12	1,441	2,882,915	14,127	1/2/2026	9/2/2029
MAITLAND - PHASE 2 - M82	0.15	602	386,105	1,892	1/2/2026	9/2/2029
MAITLAND - PHASE 2 - W0086	0.72	386	1,853,302	9,081	1/2/2026	9/2/2029
ECON - W0320	0.08	2,844	205,922	1,009	1/2/2026	6/11/2027
ECON - W0321	0.51	1,401	1,312,756	6,433	1/2/2026	6/11/2027
LAKE ALOMA - W0151	0.45	1,720	1,158,314	5,676	1/2/2026	7/1/2027
FIFTY FIRST STREET - X102	8.79	4,103	22,625,732	110,868	10/6/2022	12/30/2027
CLEARWATER - C11	0.78	1,154	2,007,744	9,838	1/2/2026	12/30/2027
CLEARWATER - C12	0.23	1,236	592,027	2,901	1/2/2026	12/30/2027
CROSS BAYOU - J143	3.34	1,320	8,597,264	42,127	1/2/2026	12/30/2027
OAKHURST - J224	8.62	2,348	22,188,147	108,724	1/2/2026	12/30/2027
VINOY - X70	4.34	2,019	11,171,295	54,740	1/2/2026	12/30/2027
PORT RICHEY WEST - C202	0.07	2,237	180,182	883	8/30/2022	3/31/2026
SEVEN SPRINGS - C4501	0.07	2,302	180,182	883	1/2/2025	9/30/2026
CURLEW - C4973	0.13	1,838	334,624	1,640	1/2/2025	9/30/2026
CURLEW - C4976	0.03	2,222	77,221	378	1/2/2025	9/30/2026
CURLEW - C4985	0.23	1,304	592,027	2,901	1/2/2025	9/30/2026
CURLEW - C4987	0.03	906	77,221	378	1/2/2025	9/30/2026
CURLEW - C4989	0.6	2,274	1,544,419	7,568	1/2/2025	9/30/2026
CURLEW - C4990	0.34	1,698	875,171	4,288	1/2/2025	9/30/2026
CURLEW - C4991	0.51	2,111	1,312,756	6,433	1/2/2025	9/30/2026
BOGGY MARSH - K957	0.15	2,972	386,105	1,892	1/2/2025	4/26/2027
BOGGY MARSH - K959	0.2	976	514,806	2,523	1/2/2025	4/26/2027
CENTRAL PARK - K495	4.03	1,026	10,373,345	50,830	1/2/2025	5/3/2027
CENTRAL PARK - W0497	0.06	62	154,442	757	1/2/2025	5/3/2027
BAY HILL - K67	0.08	1,914	205,922	1,009	1/2/2025	4/26/2027
BAY HILL - K68	0.39	1,870	1,003,872	4,919	1/2/2025	4/26/2027
BAY HILL - K73	0.07	898	180,182	883	1/2/2025	4/26/2027
BAY HILL - K76	0.3	833	772,209	3,784	1/2/2025	4/26/2027
SKY LAKE - W0363	0.34	2,160	875,171	4,288	1/2/2025	3/31/2028
SKY LAKE - W0365	0.77	2,615	1,982,004	9,712	1/2/2025	3/31/2028
SKY LAKE - W0366	1	965	2,574,031	12,613	1/2/2025	3/31/2028
SKY LAKE - W0367	0.02	219	51,481	252	1/2/2025	3/31/2028
SKY LAKE - W0368	0.44	1,266	1,132,574	5,550	1/2/2025	3/31/2028
RIO PINAR - W0968	0.11	3,514	283,143	1,387	1/2/2025	4/26/2027
RIO PINAR - W0970	0.48	3,002	1,235,535	6,054	1/2/2025	4/26/2027
RIO PINAR - W0975	0.11	3,483	283,143	1,387	1/2/2025	4/26/2027

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DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS - LATERAL HARDENING POLE REPLACEMENTS

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
BUENA VISTA	73	158,538	811,687	657	1/2/2026	12/15/2026
CLEARWATER	758	148,422	8,428,202	6,822	1/2/2026	12/15/2026
DELAND	581	91,841	6,460,139	5,229	1/2/2026	12/15/2026
HIGHLANDS	192	57,774	2,134,848	1,728	1/2/2026	12/15/2026
JAMESTOWN	30	146,108	333,570	270	1/2/2026	12/15/2026
LAKE WALES	783	148,811	8,706,177	7,047	1/2/2026	12/15/2026
LONGWOOD	62	96,080	689,378	558	1/2/2026	12/15/2026
MONTICELLO	962	60,125	10,696,478	8,658	1/2/2026	12/15/2026
OCALA	1032	94,307	11,474,808	9,288	1/2/2026	12/15/2026
SE ORLANDO	114	102,974	1,267,566	1,026	1/2/2026	12/15/2026
ST. PETERSBURG	151	183,237	1,678,969	1,359	1/2/2026	12/15/2026
WALSINGHAM	388	155,414	4,314,172	3,492	1/2/2026	12/15/2026
WINTER GARDEN	114	91,089	1,267,566	1,026	1/2/2026	12/15/2026

DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS - LATERAL HARDENING POLE INSPECTIONS

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
BUENA VISTA	550	158,538	22,000	22,000	1/2/2026	12/15/2026
CLEARWATER	5750	148,422	230,000	230,000	1/2/2026	12/15/2026
DELAND	4408	91,841	176,320	176,320	1/2/2026	12/15/2026
HIGHLANDS	1458	57,774	58,320	58,320	1/2/2026	12/15/2026
JAMESTOWN	225	146,108	9,000	9,000	1/2/2026	12/15/2026
LAKE WALES	5938	148,811	237,520	237,520	1/2/2026	12/15/2026
LONGWOOD	469	96,080	18,760	18,760	1/2/2026	12/15/2026
MONTICELLO	7301	60,125	292,040	292,040	1/2/2026	12/15/2026
OCALA	7825	94,307	313,000	313,000	1/2/2026	12/15/2026
SE ORLANDO	865	102,974	34,600	34,600	1/2/2026	12/15/2026
ST. PETERSBURG	1142	183,237	45,680	45,680	1/2/2026	12/15/2026
WALSINGHAM	2945	155,414	117,800	117,800	1/2/2026	12/15/2026
WINTER GARDEN	874	91,089	34,960	34,960	1/2/2026	12/15/2026

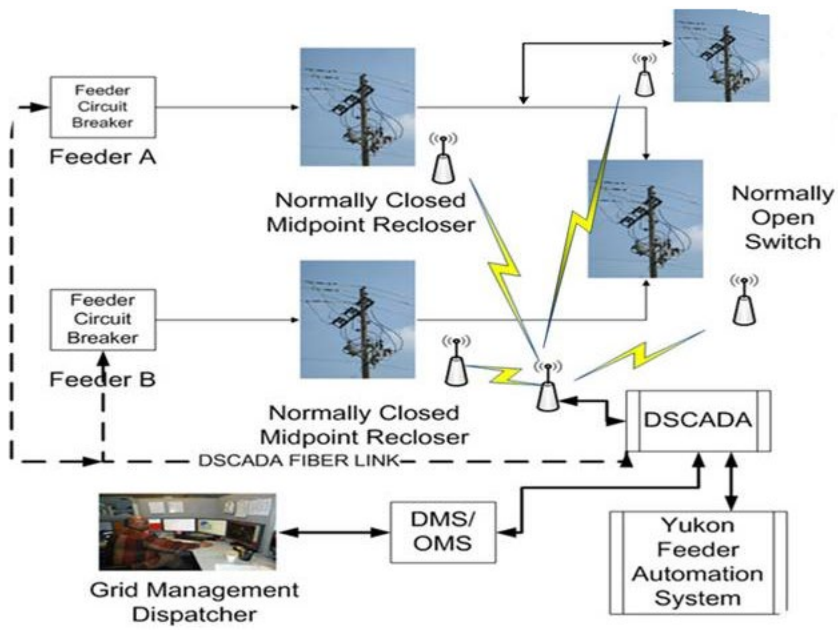
Self-Optimizing Grid – SOG

Vision

The SOG Program started as part of DEF's Grid Investment Plan which was partially funded through the 2017 Revised and Restated Settlement Agreement and was later continued through SPP 2020 and SPP 2023. DEF plans to continue this Program through SPP 2026 and at end of year 2026, approximately 80% of the distribution feeders on the DEF system will have the ability to automatically reroute power around damaged line sections. Nearly 100% of the distribution feeders will have automated switching capability. DEF is continuing to evaluate data gathered as result of hurricanes Debby, Helene, and Milton, but initial indications show the SOG Program was responsible for saving over 300 million minutes of customer outages during these storms. As a result of the Program's impressive customer benefits, DEF is evaluating whether the SOG program should be continued to cover a greater percentage of the distribution system.

Description

The current grid has limited ability to reroute and rapidly restore power. The SOG Program is established to address both issues.



The SOG Program consists of three (3) major components: capacity, connectivity, and automation and intelligence. The SOG Program redesigns key portions of the distribution system and transforms it into a dynamic smart-thinking, self-healing network. The grid will have the ability to automatically reroute power around trouble areas, like a tree on a power line, to quickly restore power to the maximum number of customers and rapidly dispatch line crews directly to the source of the outage. Self-healing technologies can reduce outage impacts by as much as 75 percent on affected feeders.

The **SOG Capacity projects** focus on expanding substation and distribution line capacity to allow for two-way power flow. **SOG Connectivity projects** create tie points between circuits. **SOG Automation projects** provide intelligence and control for the SOG operations; Automation projects enable the grid to dynamically reconfigure around trouble and restore customers not impacted by an outage.

Cost

The SOG Program's deployment to serve 80% of feeders with automated power rerouting around damaged sections of line is planned to be completed in 2026. Below are the projected units and costs for 2026-2028:

	DEF		
Self-Optimizing Grid (SOG)	**2026**	**2027**	**2028**
Totals	**$115,437,821**	**$ -**	**$ -**
Automation	$ 58,922,448	$ -	$ -
Capital	$ 58,635,408	$ -	$ -
O&M	$ 287,040	$ -	$ -
Total Units	624	0	0
Connectivity & Capacity	$ 56,515,373	$ -	$ -
Capital	$ 56,471,083	$ -	$ -
O&M	$ 44,290	$ -	$ -

Cost Benefit Comparison

Costs from 2026 through 2028 are approximately $115M Capital and $0.3M O&M.

At completion, with more customers automatically restored through automated switching, cost reductions can be achieved through better targeting of restoration efforts and personnel. SOG enables the grid to rapidly reroute power around damaged line sections. Accordingly, the benefit from the completion of this program is a reduction in customers affected by long duration outages as a result of extreme weather events, increased ability to target restoration efforts, and enhancement of overall reliability via anticipated decrease in CMI.

After deployment of the currently planned 2026 Self-Optimizing Grid Program work, DEF estimates it will reduce Distribution MED CMI by approximately 32 million to 40 million minutes annually. CMI reduction is used as a proxy for reduction in extreme weather event duration for the average customer.

Prioritization Methodology

The following steps are used to prioritize the work:

1. Probability of Damage: SOG does not directly reduce damage but rather is intended to reduce the duration of outages, thus SOG impacts are conservatively assessed after other hardening projects. Since other hardening projects reduce equipment failures and outages, the simulated SOG impacts are evaluated against this new hardened baseline. To prioritize the work in the Florida regions, the Transmission and Distribution systems were modeled, and weather simulations were run to provide probabilistic exposure frequency for all asset locations. The weather modeling uses the FEMA Hazus and SLOSH models, which contain the weather data for storms over the last 200 years. Using the geographical locations of the Florida assets and the historic storm paths embedded in the Hazus model, a spatial correlation of future storm exposure can be derived. To determine probability of damage given that exposure, eight years of historical outage data was provided and correlated with the closest weather tower to determine the conditions during historic failures recorded in the outage data. Then, the expected quantities of asset failure for simulated future weather exposure conditions was

derived by combining simulated weather patterns with historical asset failure through conditional probability methods.

2. Consequence of Damage: Once the output of probabilistic damage is assessed, the probable impact to customers is considered. This step considers the number of customers served by a given asset (e.g., each pole, or segment of conductor on a feeder), observed outage durations, the mix of customers, and critical facilities. For SOG, this step is performed based on the hardened configuration of the feeder after completion of the Feeder Hardening program (see above for a description of the Feeder Hardening program).
3. Consequence of Automation: Because the program benefits are tied to reduction in outage length and customers affected during outages, these values were calculated as a part of the simulation described in steps 1 and 2, with the addition of SOG automation. The outage time reduction varied feeder by feeder, based on number of customers served, historic observed outage durations by asset class on each feeder, the reduction impact of feeder hardening on the feeder, and current level of automation.
4. Distribution subject matter experts then use these outputs to determine the optimum deployment plan considering factors such as current projects in the area, critical customers, operational knowledge, resource availability and efficiency.

Year 1 Project List

DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS - SELF-OPTIMIZING GRID SEGMENTATION & AUTOMATION

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
FROSTPROOF - K101	6	2,728	563,802	2,760	1/2/2026	12/15/2026
CROOKED LAKE - K1771	2	1,092	187,934	920	1/2/2026	12/15/2026
WEST LAKE WALES - K866	2	1,249	187,934	920	1/2/2026	12/15/2026
CROOKED LAKE - K1772	3	940	281,901	1,380	1/2/2026	12/15/2026
LAKE WALES - K56	1	370	93,967	460	1/2/2026	12/15/2026
DELTONA EAST - W0123	5	2,299	469,835	2,300	1/2/2026	12/15/2026
CASSADAGA - W0516	2	1,625	187,934	920	1/2/2026	12/15/2026
CASSADAGA - W0523	1	814	93,967	460	1/2/2026	12/15/2026
BITHLO - W0956	4	2,260	375,868	1,840	1/2/2026	12/15/2026
BITHLO - W0951	4	1,676	375,868	1,840	1/2/2026	12/15/2026
BITHLO - W0955	5	1,487	469,835	2,300	1/2/2026	12/15/2026
BITHLO - W0952	1	818	93,967	460	1/2/2026	12/15/2026
UCF - W1012	6	2,486	563,802	2,760	1/2/2026	12/15/2026
SUNFLOWER - W0475	5	2,760	469,835	2,300	1/2/2026	12/15/2026
UCF NORTH - W0992	5	2,301	469,835	2,300	1/2/2026	12/15/2026
EAST ORANGE - W0265	4	2,039	375,868	1,840	1/2/2026	12/15/2026
SUNFLOWER - W0472	4	1,787	375,868	1,840	1/2/2026	12/15/2026
UCF - W1018	2	1,026	187,934	920	1/2/2026	12/15/2026
UCF - W1013	3	988	281,901	1,380	1/2/2026	12/15/2026
UCF - W1015	3	130	281,901	1,380	1/2/2026	12/15/2026
HUNTERS CREEK - K40	5	2,190	469,835	2,300	1/2/2026	12/15/2026
HUNTERS CREEK - K48	4	1,811	375,868	1,840	1/2/2026	12/15/2026
HUNTERS CREEK - K43	4	1,598	375,868	1,840	1/2/2026	12/15/2026
MIDWAY - K1475	6	2,909	563,802	2,760	1/2/2026	12/15/2026
MIDWAY - K1473	5	2,478	469,835	2,300	1/2/2026	12/15/2026

POINCIANA NORTH - K631	4	2,198	375,868	1,840	1/2/2026	12/15/2026
POINCIANA - K1237	4	2,383	375,868	1,840	1/2/2026	12/15/2026
MIDWAY - K1472	3	2,026	281,901	1,380	1/2/2026	12/15/2026
POINCIANA - K1556	3	1,745	281,901	1,380	1/2/2026	12/15/2026
POINCIANA - K1509	5	1,676	469,835	2,300	1/2/2026	12/15/2026
POINCIANA NORTH - K629	2	1,545	187,934	920	1/2/2026	12/15/2026
MONTICELLO - N67	2	1,643	187,934	920	1/2/2026	12/15/2026
MONTICELLO - N69	2	1,317	187,934	920	1/2/2026	12/15/2026
WAUKEENAH - N65	1	550	93,967	460	1/2/2026	12/15/2026
MONTICELLO - N66	1	731	93,967	460	1/2/2026	12/15/2026
WAUKEENAH - N64	6	698	563,802	2,760	1/2/2026	12/15/2026
MONTICELLO - N68	1	318	93,967	460	1/2/2026	12/15/2026
BAYVIEW - C654	4	3,431	375,868	1,840	1/2/2026	12/15/2026
BAYVIEW - C657	6	2,835	563,802	2,760	1/2/2026	12/15/2026
LARGO - J403	3	2,633	281,901	1,380	1/2/2026	12/15/2026
TRI-CITY - J5032	5	2,895	469,835	2,300	1/2/2026	12/15/2026
TRI-CITY - J5036	6	2,397	563,802	2,760	1/2/2026	12/15/2026
ZEPHYRHILLS - C855	7	2,962	657,769	3,220	1/2/2026	12/15/2026
ZEPHYRHILLS - C851	6	3,002	563,802	2,760	1/2/2026	12/15/2026
ZEPHYRHILLS NORTH - C340	5	2,901	469,835	2,300	1/2/2026	12/15/2026
ZEPHYRHILLS NORTH - C341	5	2,582	469,835	2,300	1/2/2026	12/15/2026
ZEPHYRHILLS NORTH - C345	2	1,588	187,934	920	1/2/2026	12/15/2026
ZEPHYRHILLS - C852	3	484	281,901	1,380	1/2/2026	12/15/2026
BEVERLY HILLS - A75	4	2,149	375,868	1,840	1/2/2026	12/15/2026
BEVERLY HILLS - A72	4	1,783	375,868	1,840	1/2/2026	12/15/2026
BEVERLY HILLS - A74	2	1,625	187,934	920	1/2/2026	12/15/2026
HOLDER - A47	3	1,718	281,901	1,380	1/2/2026	12/15/2026
BEVERLY HILLS - A73	3	1,451	281,901	1,380	1/2/2026	12/15/2026
PERRY NORTH - N14	2	1,704	187,934	920	1/2/2026	12/15/2026
PERRY - N9	2	1,136	187,934	920	1/2/2026	12/15/2026
PERRY - N10	1	1,093	93,967	460	1/2/2026	12/15/2026
PERRY - N7	1	1,049	93,967	460	1/2/2026	12/15/2026
PERRY NORTH - N15	2	1,013	187,934	920	1/2/2026	12/15/2026
PERRY - N8	1	389	93,967	460	1/2/2026	12/15/2026
DUNNELLON TOWN - A68	4	2,480	375,868	1,840	1/2/2026	12/15/2026
INDIAN PASS - N556	3	2,272	281,901	1,380	1/2/2026	12/15/2026
BEACON HILL - N527	1	1,563	93,967	460	1/2/2026	12/15/2026
PORT ST. JOE - N53	1	1,318	93,967	460	1/2/2026	12/15/2026
PORT ST. JOE - N52	1	821	93,967	460	1/2/2026	12/15/2026
PORT ST. JOE - N54	1	791	93,967	460	1/2/2026	12/15/2026
PORT ST. JOE IND. - N202	2	1,152	187,934	920	1/2/2026	12/15/2026
MADISON - N3	2	1,568	187,934	920	1/2/2026	12/15/2026
MADISON - N2	1	921	93,967	460	1/2/2026	12/15/2026
MADISON - N4	1	337	93,967	460	1/2/2026	12/15/2026
CIRCLE SQUARE - A251	7	2,702	657,769	3,220	1/2/2026	12/15/2026
CIRCLE SQUARE - A250	8	2,863	751,736	3,680	1/2/2026	12/15/2026

CIRCLE SQUARE - A253	4	1,866	375,868	1,840	1/2/2026	12/15/2026
HERNANDO AIRPORT - A431	4	2,781	375,868	1,840	1/2/2026	12/15/2026
TANGERINE - A264	3	1,078	281,901	1,380	1/2/2026	12/15/2026
TANGERINE - A263	1	897	93,967	460	1/2/2026	12/15/2026
HERNANDO AIRPORT - A430	4	453	375,868	1,840	1/2/2026	12/15/2026
ANCLOTE - C4206	4	2,462	375,868	1,840	1/2/2026	12/15/2026
ELFERS - C953	3	1,939	281,901	1,380	1/2/2026	12/15/2026
ELFERS - C954	1	1,356	93,967	460	1/2/2026	12/15/2026
BROOKSVILLE - A95	3	1,768	281,901	1,380	1/2/2026	12/15/2026
BROOKSVILLE - A96	2	1,696	187,934	920	1/2/2026	12/15/2026
TANGERINE - A262	2	1,671	187,934	920	1/2/2026	12/15/2026
BROOKSVILLE - A97	2	1,554	187,934	920	1/2/2026	12/15/2026
BROOKSVILLE - A98	2	1,477	187,934	920	1/2/2026	12/15/2026
DENHAM - C152	6	3,119	563,802	2,760	1/2/2026	12/15/2026
MORGAN RD - C55	5	2,403	469,835	2,300	1/2/2026	12/15/2026
MORGAN RD - C53	5	2,249	469,835	2,300	1/2/2026	12/15/2026
DENHAM - C157	2	1,896	187,934	920	1/2/2026	12/15/2026
DENHAM - C151	4	1,678	375,868	1,840	1/2/2026	12/15/2026
DENHAM - C156	4	1,594	375,868	1,840	1/2/2026	12/15/2026
MORGAN RD - C54	3	1,244	281,901	1,380	1/2/2026	12/15/2026
MORGAN RD - C52	8	1,365	751,736	3,680	1/2/2026	12/15/2026
MORGAN RD - C56	2	1,070	187,934	920	1/2/2026	12/15/2026
MORGAN RD - C57	2	1,591	187,934	920	1/2/2026	12/15/2026
INVERNESS - A82	3	1,958	281,901	1,380	1/2/2026	12/15/2026
INVERNESS - A81	2	1,772	187,934	920	1/2/2026	12/15/2026
INVERNESS - A84	1	1,296	93,967	460	1/2/2026	12/15/2026
INVERNESS - A85	3	1,010	281,901	1,380	1/2/2026	12/15/2026
ADAMS - A199	2	1,527	187,934	920	1/2/2026	12/15/2026
DUNNELLON TOWN - A69	1	1,130	93,967	460	1/2/2026	12/15/2026
DUNNELLON TOWN - A70	1	1,408	93,967	460	1/2/2026	12/15/2026
RAINBOW SPRINGS - A368	1	1,400	93,967	460	1/2/2026	12/15/2026
DUNNELLON TOWN - A71	1	1,082	93,967	460	1/2/2026	12/15/2026
RAINBOW SPRINGS - A369	1	1,147	93,967	460	1/2/2026	12/15/2026
GEORGIA PACIFIC - A45	4	1,425	375,868	1,840	1/2/2026	12/15/2026
ZUBER - A205	1	1,122	93,967	460	1/2/2026	12/15/2026
ZUBER - A202	2	751	187,934	920	1/2/2026	12/15/2026
LAND O LAKES - C148	9	2,853	845,703	4,140	1/2/2026	12/15/2026
LAND O LAKES - C141	7	2,190	657,769	3,220	1/2/2026	12/15/2026
ODESSA - C4322	8	3,684	751,736	3,680	1/2/2026	12/15/2026
ODESSA - C4318	7	1,855	657,769	3,220	1/2/2026	12/15/2026
EATONVILLE - M1135	6	2,651	563,802	2,760	1/2/2026	12/15/2026
SPRING LAKE - M669	4	2,011	375,868	1,840	1/2/2026	12/15/2026
PIEDMONT - M474	3	2,040	281,901	1,380	1/2/2026	12/15/2026
PIEDMONT - M473	3	1,706	281,901	1,380	1/2/2026	12/15/2026
LOCKHART - M412	3	1,809	281,901	1,380	1/2/2026	12/15/2026
PIEDMONT - M472	2	1,539	187,934	920	1/2/2026	12/15/2026

SUN-N-LAKES - K1136	5	2,336	469,835	2,300	1/2/2026	12/15/2026
LAKEWOOD - K1706	3	2,047	281,901	1,380	1/2/2026	12/15/2026
SUN-N-LAKES - K1135	3	2,011	281,901	1,380	1/2/2026	12/15/2026
SUN-N-LAKES - K1297	3	1,383	281,901	1,380	1/2/2026	12/15/2026
SUN-N-LAKES - K1300	2	1,289	187,934	920	1/2/2026	12/15/2026
LAKEWOOD - K1705	2	1,107	187,934	920	1/2/2026	12/15/2026
DESOTO CITY - K3222	2	527	187,934	920	1/2/2026	12/15/2026
MINNEOLA - K949	4	2,518	375,868	1,840	1/2/2026	12/15/2026
MINNEOLA - K946	3	1,607	281,901	1,380	1/2/2026	12/15/2026
EUSTIS - M504	4	1,414	375,868	1,840	1/2/2026	12/15/2026
EUSTIS SOUTH - M1059	2	1,750	187,934	920	1/2/2026	12/15/2026
EUSTIS - M499	3	1,630	281,901	1,380	1/2/2026	12/15/2026
EUSTIS - M503	2	1,444	187,934	920	1/2/2026	12/15/2026
EUSTIS SOUTH - M1055	2	1,473	187,934	920	1/2/2026	12/15/2026
EUSTIS - M501	2	1,732	187,934	920	1/2/2026	12/15/2026
EUSTIS SOUTH - M1054	1	756	93,967	460	1/2/2026	12/15/2026
LEISURE LAKES - K1415	4	2,145	375,868	1,840	1/2/2026	12/15/2026
LAKE PLACID NORTH - K24	2	951	187,934	920	1/2/2026	12/15/2026
DESOTO CITY - K3221	4	329	375,868	1,840	1/2/2026	12/15/2026
CHAMPIONS GATE - K1764	4	2,056	375,868	1,840	1/2/2026	12/15/2026
LAKE WILSON - K881	3	2,587	281,901	1,380	1/2/2026	12/15/2026
LAKE WILSON - K881/K880	5	2,587	469,835	2,300	1/2/2026	12/15/2026
BAY RIDGE - M451	3	1,078	281,901	1,380	1/2/2026	12/15/2026
BAY RIDGE - M453	2	1,675	187,934	920	1/2/2026	12/15/2026
WELCH ROAD - M548	3	1,723	281,901	1,380	1/2/2026	12/15/2026
WELCH ROAD - M545	3	1,129	281,901	1,380	1/2/2026	12/15/2026
BAY RIDGE - M447	2	1,317	187,934	920	1/2/2026	12/15/2026
WOLF LAKE - M564	2	1,063	187,934	920	1/2/2026	12/15/2026
BAY RIDGE - M445	1	1,716	93,967	460	1/2/2026	12/15/2026
KELLY PARK - M822	1	453	93,967	460	1/2/2026	12/15/2026
LAKE OF THE HILLS - K1885	1	1,353	93,967	460	1/2/2026	12/15/2026
CYPRESSWOOD - K561	2	1,167	187,934	920	1/2/2026	12/15/2026
COUNTRY OAKS - K1443	2	1,157	187,934	920	1/2/2026	12/15/2026
DUNDEE - K3246	1	446	93,967	460	1/2/2026	12/15/2026
LISBON - M1519	4	2,052	375,868	1,840	1/2/2026	12/15/2026
LISBON - M1518	4	1,875	375,868	1,840	1/2/2026	12/15/2026
LISBON - M1520	2	1,903	187,934	920	1/2/2026	12/15/2026
UMATILLA - M4407	4	2,312	375,868	1,840	1/2/2026	12/15/2026
UMATILLA - M4405	2	790	187,934	920	1/2/2026	12/15/2026
COLEMAN - A105	5	301	469,835	2,300	1/2/2026	12/15/2026
EAGLES NEST - A228	3	1,727	281,901	1,380	1/2/2026	12/15/2026
BELLEVIEW - A3	4	542	375,868	1,840	1/2/2026	12/15/2026
WILDWOOD - A395	4	3,022	375,868	1,840	1/2/2026	12/15/2026
LAKE WEIR - A61	3	1,743	281,901	1,380	1/2/2026	12/15/2026
TRENTON - A90	2	1,261	187,934	920	1/2/2026	12/15/2026
EAST CLEARWATER - C903	2	559	187,934	920	1/2/2026	12/15/2026

ELFERS - C951	3	1,577	281,901	1,380	1/2/2026	12/15/2026
EAST LAKE WALES - K1032	3	1,602	281,901	1,380	1/2/2026	12/15/2026
FOUR CORNERS - K1407	2	174	187,934	920	1/2/2026	12/15/2026
WORLD GATEWAY - K187	2	645	187,934	920	1/2/2026	12/15/2026
LAKE BRYAN - K230	3	32	281,901	1,380	1/2/2026	12/15/2026
LAKE BRYAN - K239	1	907	93,967	460	1/2/2026	12/15/2026
LAKE BRYAN - K240	2	1,111	187,934	920	1/2/2026	12/15/2026
OKAHUMPKA - K284	3	1,627	281,901	1,380	1/2/2026	12/15/2026
CYPRESSWOOD - K317	1	992	93,967	460	1/2/2026	12/15/2026
GROVELAND - K673	3	1,645	281,901	1,380	1/2/2026	12/15/2026
CLARCONA - M339	1	679	93,967	460	1/2/2026	12/15/2026
LAKE EMMA - M424	1	1,027	93,967	460	1/2/2026	12/15/2026
WELCH ROAD - M543	2	1,192	187,934	920	1/2/2026	12/15/2026
PLYMOUTH - M704	2	980	187,934	920	1/2/2026	12/15/2026
SUNFLOWER - W0469	6	1,253	563,802	2,760	1/2/2026	12/15/2026
MAGNOLIA RANCH - W0504	6	3,036	563,802	2,760	1/2/2026	12/15/2026
HIGHBANKS - W0751	1	1,767	93,967	460	1/2/2026	12/15/2026
BARBERVILLE - W0902	3	1,516	281,901	1,380	1/2/2026	12/15/2026
DISSTON - X61	1	1,009	93,967	460	1/2/2026	12/15/2026
WELCH ROAD - M542	1	1,768	93,967	460	1/2/2026	12/15/2026
PIEDMONT - M475	1	1,508	93,967	460	1/2/2026	12/15/2026
WELCH ROAD - M550	2	1,616	187,934	920	1/2/2026	12/15/2026
PLYMOUTH - M707	1	1,726	93,967	460	1/2/2026	12/15/2026
APOPKA SOUTH - M725	2	1,695	187,934	920	1/2/2026	12/15/2026
APOPKA SOUTH - M721	1	1,559	93,967	460	1/2/2026	12/15/2026
ZELLWOOD - M32	1	1,099	93,967	460	1/2/2026	12/15/2026
PIEDMONT - M478	1	1,929	93,967	460	1/2/2026	12/15/2026
BROOKER CREEK - C5404	2	2,813	187,934	920	1/2/2026	12/15/2026
CURLEW - C4976	2	2,222	187,934	920	1/2/2026	12/15/2026
BROOKER CREEK - C5406	2	2,180	187,934	920	1/2/2026	12/15/2026
CURLEW - C4972	2	1,848	187,934	920	1/2/2026	12/15/2026
BROOKER CREEK - C5405	2	1,343	187,934	920	1/2/2026	12/15/2026
BROOKER CREEK - C5400	2	1,061	187,934	920	1/2/2026	12/15/2026
CITRUS HILLS - A284	1	1,027	93,967	460	1/2/2026	12/15/2026
CITRUS HILLS - A286	1	1,669	93,967	460	1/2/2026	12/15/2026
TURNER PLANT - W0761	1	1,977	93,967	460	1/2/2026	12/15/2026
DELTONA - W4558	1	1,566	93,967	460	1/2/2026	12/15/2026
EUSTIS SOUTH - M1058	1	1,953	93,967	460	1/2/2026	12/15/2026
EUSTIS SOUTH - M1056	1	1,772	93,967	460	1/2/2026	12/15/2026
ALAFAYA - W0290	2	2,299	187,934	920	1/2/2026	12/15/2026
UCF NORTH - W0981	2	1,837	187,934	920	1/2/2026	12/15/2026
UCF NORTH - W0980	1	1,680	93,967	460	1/2/2026	12/15/2026
LOCKWOOD - W0482	1	1,495	93,967	460	1/2/2026	12/15/2026
UCF NORTH - W0988	2	372	187,934	920	1/2/2026	12/15/2026
NORTHRIDGE - K1822	3	2,897	281,901	1,380	1/2/2026	12/15/2026
WEST DAVENPORT - K1524	1	2,293	93,967	460	1/2/2026	12/15/2026

GIFFORD - K83	3	4,190	281,901	1,380	1/2/2026	12/15/2026
GIFFORD - K84	2	3,755	187,934	920	1/2/2026	12/15/2026
REEDY LAKE - K1108	2	3,131	187,934	920	1/2/2026	12/15/2026
ANCLOTE - C4204	1	1	93,967	460	1/2/2026	12/15/2026
HOLOPAW - W0629	1	1,280	93,967	460	1/2/2026	12/15/2026
LARGO BANK 02 - J406	5	2,042	469,835	2,300	1/2/2026	12/15/2026
DOUGLAS AVENUE BANK02 - M113	2	1,570	187,934	920	1/2/2026	12/15/2026
DOUGLAS AVENUE BANK02 - M1706	2	1,642	187,934	920	1/2/2026	12/15/2026
DOUGLAS AVENUE BANK02 - M471	3	1,675	281,901	1,380	1/2/2026	12/15/2026
DOUGLAS AVENUE BANK02 - M663	2	1,274	187,934	920	1/2/2026	12/15/2026
DOUGLAS AVENUE BANK02 - M670	2	1,652	187,938	920	1/2/2026	12/15/2026

DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS - SELF-OPTIMIZING GRID CAPACITY & CONNECTIVITY

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
WEST LAKE WALES - K866	3.41	1,249	4,478,288	3,512	1/2/2026	12/15/2026
CROOKED LAKE - K1772	3.41	940	4,478,288	3,512	1/2/2026	12/15/2026
UCF - W1012	0.21	2,486	275,789	216	1/2/2026	12/15/2026
EAST ORANGE - W0265	0.21	2,039	275,789	216	1/2/2026	12/15/2026
MIDWAY - K1472	0.78	2,026	1,024,359	803	1/2/2026	12/15/2026
POINCIANA - K1556	1.17	1,745	1,536,539	1,205	1/2/2026	12/15/2026
TRI-CITY - J5032	0.27	2,895	354,586	278	1/2/2026	12/15/2026
ZEPHYRHILLS - C855	0.42	2,962	551,578	433	1/2/2026	12/15/2026
ZEPHYRHILLS NORTH - C340	0.19	2,901	249,523	196	1/2/2026	12/15/2026
ZEPHYRHILLS NORTH - C341	0.09	2,582	118,195	93	1/2/2026	12/15/2026
ZEPHYRHILLS NORTH - C345	1.33	1,588	1,746,664	1,370	1/2/2026	12/15/2026
BEVERLY HILLS - A75	1.04	2,149	1,365,812	1,071	1/2/2026	12/15/2026
CIRCLE SQUARE - A251	0.57	2,702	748,570	587	1/2/2026	12/15/2026
BROOKSVILLE - A95	1.04	1,768	1,365,812	1,071	1/2/2026	12/15/2026
TANGERINE - A262	1.33	1,671	1,746,664	1,370	1/2/2026	12/15/2026
BROOKSVILLE - A97	1.42	1,554	1,864,859	1,463	1/2/2026	12/15/2026
MORGAN RD - C53	0.13	2,249	170,727	134	1/2/2026	12/15/2026
DENHAM - C157	1.52	1,896	1,996,187	1,566	1/2/2026	12/15/2026
DENHAM - C156	0.76	1,594	998,094	783	1/2/2026	12/15/2026
MORGAN RD - C56	3.26	1,070	4,281,296	3,358	1/2/2026	12/15/2026
DUNNELLON TOWN - A69	2.08	1,130	2,731,624	2,142	1/2/2026	12/15/2026
PIEDMONT - M472	0.11	1,539	144,461	113	1/2/2026	12/15/2026
SUN-N-LAKES - K1136	0.28	2,336	367,719	288	1/2/2026	12/15/2026
SUN-N-LAKES - K1300	0.19	1,289	249,523	196	1/2/2026	12/15/2026
LAKE PLACID NORTH - K24	0.87	951	1,142,554	896	1/2/2026	12/15/2026
DESOTO CITY - K3221	0.28	329	367,719	288	1/2/2026	12/15/2026
DUNDEE - K3246	0.57	446	748,570	587	1/2/2026	12/15/2026
CRYSTAL RIVER SOUTH - A159	2.84	1,111	3,729,718	2,925	1/2/2026	12/15/2026

WOODSMERE - M254	0.85	702	1,116,289	876	1/2/2026	12/15/2026
EATONVILLE - M1138	0.66	471	866,765	680	1/2/2026	12/15/2026
HAINES CITY - K21	1.55	3330	2,035,586	1,597	1/2/2026	12/15/2026
PILSBURY - X256	0.76	402	998,094	783	1/2/2026	12/15/2026
ANCLOTE PLANT BANK 08 - C4201	1.59	2685	2,088,117	1,638	1/2/2026	12/15/2026
NARCOSEE BANK 02 - W0217	3.72	2549	4,885,405	3,832	1/2/2026	12/15/2026
NORTHEAST BANK 02 - X287	0.13	2408	170,727	134	1/2/2026	12/15/2026
DOUGLAS AVENUE BANK02 - A48	0.38	1998	499,047	391	1/2/2026	12/15/2026
LARGO BANK 02 - J405	0.17	1812	223,258	175	1/2/2026	12/15/2026
ANCLOTE - C4204	1.14	1	1,497,140	1,174	1/2/2026	12/15/2026
LARGO BANK 02 - J406	1.14	2042	1,497,140	1,174	1/2/2026	12/15/2026
DOUGLAS AVENUE BANK02 - M1706	1.13	1642	1,484,004	1,164	1/2/2026	12/15/2026

Underground Flood Mitigation

Vision

The Underground Flood Mitigation program is a targeted Program to harden existing underground distribution facilities in locations that are prone to storm surge during extreme weather events. This Program will address the areas identified as being at high risk for significant flooding by installing submersible equipment. The Underground Flood Mitigation Program is scheduled to start in 2025 and is estimated to take 30 years to complete.

Description

Underground Flood Mitigation will harden existing underground line and equipment to withstand storm surge through the use of DEF's current storm surge standards. This involves the installation of specialized stainless-steel equipment, submersible connections and concrete pads with increased mass. The primary purpose of this hardening activity is to minimize the equipment damage caused by storm surge and thus reduce customer outages and/or expedite restoration after the storm surge has receded.

For selected locations, DEF would utilize a concrete pad with increased weight and stainless steel tiedowns and change all the connections to waterproof (submersible) connections. Conventional switchgear would be replaced with submersible switchgears that are able to withstand the storm surge.

Figure 1: Underground construction with severe corrosion and electrolysis due to storm surge during Hurricane Helene

Figure 2: Underground construction with sealed connectors mitigating impacts of storm surge.

Cost

It is expected that the 10-year cost will be approximately $15M.

	DEF		
UG Flood Mitigation	**2026**	**2027**	**2028**
Totals	**$ 1,497,150**	**$ 1,534,575**	**$ 1,551,963**
Capital	$ 1,497,150	$ 1,534,575	$ 1,551,963
O&M	$ -	$ -	$ -
Total Units	75	75	74

Cost Benefit Comparison

As provided in the Cost section above, the estimated cost for DEF's Underground Flood Mitigation Program during the 10-year planning horizon is approximately $15M Capital.

After deployment of the 2026-2035 Underground Flood Mitigation Program work, DEF estimates it will reduce the cost of extreme weather events on the Distribution system by approximately $0.8M to $1.0M annually based on today's costs.

After deployment of the 2026-2035 Underground Flood Mitigation Program work, DEF estimates it will reduce Distribution MED CMI by approximately 0.6 million to 0.8 million minutes annually. CMI reduction is used as a proxy for reduction in extreme weather event duration for the average customer.

Prioritization Methodology

Work will be prioritized using the following process.

1. Probability of Damage: To prioritize the work in the Florida regions, the Transmission and Distribution systems were modeled, and weather simulations were run to provide probabilistic exposure frequency for all asset locations. The weather modeling uses the FEMA Hazus and SLOSH models, which contain the weather data for storms over the last 200 years. Using the geographical locations of the Florida assets and the historic storm paths embedded in the Hazus model, a spatial correlation of future storm exposure can be derived. To determine probability of damage given that exposure, eight years of historical outage data was provided and correlated with the closest weather tower to determine the conditions during historic failures recorded in the outage data. Then, the expected quantities of asset failure for simulated future weather exposure conditions was derived by combining simulated weather patterns with historical asset failure through conditional probability methods.
2. Consequence of Damage: Once the output of probabilistic damage is assessed, the probable impact to customers is considered. This step considers the number of customers served by a given asset (e.g., each pole, or segment of conductor on a feeder), observed outage durations, the mix of customers, and critical facilities. This step is performed both for the existing configuration of each feeder, and the hardened configuration resulting from completion of the program. The difference between the existing condition and the hardened configuration is the program impact.

3. Distribution subject matter experts then use these outputs to determine the optimum deployment plan considering factors such as current projects in the area, critical customers, operational knowledge, resource availability and efficiency.

Year 1 Project List

DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS – UNDERGROUND FLOOD MITIGATION

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
FLORAMAR - C4002	75	2,343	1,497,150	-	1/2/2026	12/15/2026

Distribution Vegetation Management

Vision

DEF will continue to utilize a fully Integrated Vegetation Management (IVM) to minimize the impact of vegetation on the distribution assets.

Description

DEF Distribution will continue a fully IVM program focused on trimming feeders and laterals on an average 3 and 5-year cycles respectively. This corresponds to trimming approximately 1,900 miles of feeder backbone and 2,450 miles of laterals annually. The IVM program consists of the following: routine maintenance “trimming”, hazard tree removal, herbicide applications, vine removal, customer requested work, and right-of-way brush “mowing” where applicable. The IVM program incorporates a combination of condition, time since last trim and reliability-driven prioritization of work to reduce event possibilities during extreme weather events and enhance overall reliability.

Additionally, a hazard tree patrol is conducted every year on all three-phase circuits. Hazard trees are defined as trees that are dead, dying, structurally unsound, diseased, leaning or otherwise defective. The trees that are located within the right of way are removed prior to hurricane season each year, hazard trees that are located outside the right of way require landowner permission prior to removal. After contact with the landowner is initiated and permission for removal received, tree removal is targeted for completion prior to hurricane season when possible. If a feeder circuit is relocated or circuit height changes, an additional hazard tree assessment will be conducted in the line segments that will be impacted.

DEF will optimize the IVM program costs against reliability and storm performance objectives to harden the system for extreme weather events. There are four key objectives for optimization:

- Customer and employee safety;
- Tree-caused outage minimization, with the objective to reduce the number of tree-caused outages, particularly in the “preventable” category;
- Effective cost management; and
- Customer satisfaction.

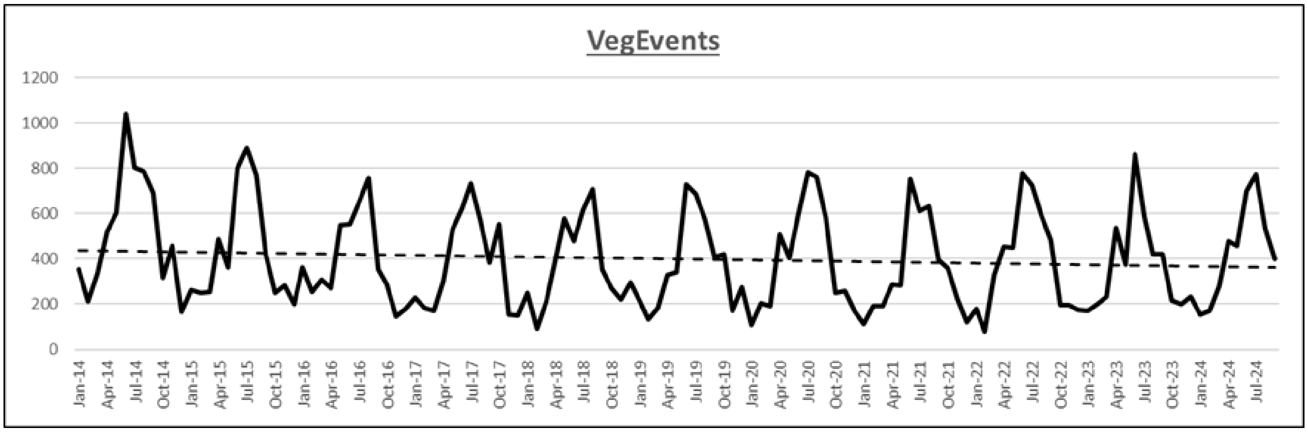
Cost

It is expected that the 10-year cost will be approximately $34M Capital and $566M O&M. This would cover the inspection and vegetation remediation activities. The circuit maintenance work performed is predominantly billed under a unit-based contract structure and not differentiated between labor and equipment. The estimated contractor ratio is 95% and the estimated utility personnel ratio is 5%.

2026-2028 Labor / Equipment Breakout		
	Labor	Equipment
Utility Personnel Totals	**$ 7,939,735**	**$ 417,881**
Capital	$ 665,378	$ 35,020
O&M	$ 7,274,357	$ 382,861
Contract Personnel Totals	**$ 115,374,051**	**$ 38,200,442**
Capital	$ 6,429,227	$ 2,143,076
O&M	$ 108,944,824	$ 36,057,366

	DEF		
VM - Distribution	2026	2027	2028
Totals	$ 52,399,115	$ 53,961,648	$ 55,571,345
Capital	$ 3,000,000	$ 3,090,000	$ 3,182,700
O&M	$ 49,399,115	$ 50,871,648	$ 52,388,645
Approximate Miles	4,450	4,385	4,385

Cost Benefit Comparison



DEF's Distribution IVM program is focused on delivering reliable electric service in a cost-effective manner while utilizing industry best management practices to control the growth of incompatible vegetation to ensure the safe operation of the distribution system by minimizing vegetation-related interruptions and ensuring adequate conductor-to-vegetation clearances. The Vegetation Management Program maintains compliance with regulatory, environmental and safety requirements/standards. The chart above shows a reduction in vegetation related outage events over the past 10 years and demonstrates the effectiveness of the IVM program. Activities focus on the removal and/or control of incompatible vegetation within and along the right of way to minimize the risk of vegetation-related outages.

Prioritization Methodology

DEF's Distribution Vegetation Management Program is leveraging advanced technologies such as remotely sensed imagery (i.e. satellite) and modelling to develop a condition-based maintenance strategy. This modelling takes into account vegetation density and proximity to conductors, previous tree-caused outages, equipment configuration, and time since last pruning to determine the risk of a future tree-caused outage and the optimal time to prune.

As systems and technologies continue to evolve and mature, DEF intends to leverage emerging technologies/systems and analytics to evaluate numerous variables coupled with local knowledge to optimize the annual planning and scheduling of work DEF follows the ANSI 300 standard for pruning and the guide "Pruning Trees Near Electric Utility Lines" by Dr. Alex L. Shigo.

Transmission Programs

Program Summaries

Structure Hardening

Vision

The Structure Hardening program began in 2021 and focuses on DEF's transmission structures throughout the state. As part of the program completion, all wood poles on DEF's transmission system will be replaced with non-wood structures within 3 years. In addition, at the completion of the program, approximately 6,000 towers will be hardened, cathodic protection installed on all eligible towers, approximately 56,000 insulator sites upgraded, approximately 824 miles of overhead ground wire will be replaced, and approximately 60 gang operated air break switches will be automated for system resiliency. The Structure Hardening Program is estimated to take approximately 30 years to complete from inception and will enhance the overall reliability of the DEF transmission system.

Description

The Transmission Structure Hardening program addresses existing vulnerabilities on the system. This will enable the transmission system to better withstand extreme weather events. This program includes wood to non-wood upgrades, tower upgrades, adding cathodic protection, automating gang operated air break switches, insulator upgrades, overhead ground wire upgrades, and structure inspections.

Figure 1: Broken Pole due to extreme weather event.

Figure 2: Broken Static due to extreme weather event.

Wood to Non-Wood Upgrade

This activity upgrades wood poles to non-wood material such as steel or concrete. Wood pole failure has been the predominate structure damage to the transmission system during extreme weather. This strengthens structures by eliminating damage from woodpeckers and wood rot. The new structures will be more resistant to damage from extreme weather events. Other related hardware upgrades will occur simultaneously, such as insulators, crossarms, switches, and guys.

Figure 3: Wood to non-wood upgrade.

Tower Upgrade

Tower Upgrade will prioritize towers based on inspection data and enhanced weather modeling. The upgrade activities will replace tower types that have previously failed during extreme weather events.

In addition, the tower upgrade activities will upgrade towers identified by visual ground inspections, aerial drone inspections and data gathered during cathodic protection installations (discussed below). This will improve the ability of the transmission grid to sustain operations during extreme weather events by reducing outages and improving restoration times. Other related hardware upgrades will occur simultaneously such as insulators, cathodic protection, and guys.

Figure 4: Lattice Tower impacted by Hurricane Idalia

Cathodic Protection

The purpose of the Cathodic Protection (CP) activities is to mitigate active groundline corrosion on the tower system. This will be done by installing passive CP systems comprised of anodes on each leg of the towers. The anodes serve as sacrificial assets that corrode in place of structural steel, preventing loss of structure strength to corrosion. Each CP project will address all towers on a line from beginning point to end point.

The following tangible benefits will be gained related to hardening the tower system:

- Site Classification - Subsurface investigation and cathodic protection installation prioritized first on all lattice structures. Then prioritizing lines based on system criticality, age, and potential storm impact. Galvanization and member thickness measurements will be taken on all legs and diagonals, and structural steel will be classified by corrosion severity. Concrete piers will be classified on concrete health, cracking, and rebar corrosion. This system evaluation will identify any potential weak spots resulting from ground line corrosion on DEF's lattice system.

- Corrosion Mitigation – Each structure tower leg will have cathodic protection installed on it in order to arrest the corrosion process.

- Corrosion Database – Soil conditions recorded at each tower site will include resistivity, soil pH, redox, and half-cell potentials. These values will be saved into a database which will be used to help classify areas of DEF's system prone to corrosion. This information will be used to aid in condition-based maintenance of system infrastructure.

Gang Operated Air Break (GOAB)

The GOAB line switch automation project is an initiative that will upgrade switch locations with modern switches enabled with SCADA communication and remote-control capabilities. Automation will add resiliency to the transmission system. Later years will include adding new switch locations to add further resiliency to the transmission system. Transmission line switches are currently manually operated and cannot be remotely monitored or controlled. Switching, a grid operation often used to section off portions of the transmission system in order to perform equipment maintenance or isolate trouble spots to minimize impacts to customers, has historically required a technician to go to the site and manually operate one or more-line switches. The GOAB upgrade increases the number of remote-controlled switches to support faster isolation of trouble spots on the transmission system and more rapid restoration following line faults.

Figure 5: DEF Manually Operated Switch

Overhead Ground Wire (OHGW)

Florida is known for a high concentration of lightning events, which continually stress the existing grid protection. Deteriorated overhead ground wire reduces the protection of the conductor and exposes the line to repeated lightning damage and risk of failure impacting the system. This initiative will also reduce the safety risk due to the required removal of OHGW prior to any restoration work on the system. By targeting deteriorated OHGW on lines with high lightning events, the benefit of this activity will be maximized. An added benefit is upgrading to fiber optic OHGW, facilitating high-speed relaying and enhanced communication and control between stations and centralized control centers.

Structure Inspections and Drone Inspections

The transmission system's inspection activities include all types of structures, line hardware, guying, and anchoring systems. Inspections include:

- Aerial helicopter Transmission Line Inspections
- Wood Pole Line Patrols
- Wood Pole Sound and Bore Line Patrol – 8-year cycle
- Non-wood Structure Line Patrols – 6-year cycle

DEF will continue to conduct drone inspections on targeted lattice tower lines. The intent of these continued inspections is to identify otherwise difficult to see structure, hardware, or insulation vulnerabilities through high resolution imagery. DEF has incorporated drone patrols into the inspections because drones have the unique ability to provide a close vantage point with multiple angles on structures that is unattainable through aerial or ground patrols with binoculars.

Figure 6: Failed static due to extreme weather event.

Insulators

The line insulator subprogram is targeting porcelain insulators which show pin erosion ‘penciling’ of the connections between the insulators. The replacement insulators utilize a more uniform matrix than porcelain, with a design change that includes a zinc sleeve to mitigate the pin erosion for a better mechanical connection. The implementation of the improved design in the bell and connection is to reduce the effects of penciling over time, ultimately mitigating failure during extreme weather events and minimizing outage events.

Figure 7: Failed porcelain insulator due to extreme weather event.

Cost

DEF estimates the 10-year cost will be approximately $1.6B Capital and $21M O&M, and will entail approximately:

- 3,000 wood to non-wood poles;
- 2,000 tower replacements;
- Cathodic protection for all towers;
- 40 GOABs;
- 670 miles of OHGW;
- Insulators; and
- System inspection cycles, ground, and aerial.

	DEF		
Structure Hardening	2026	2027	2028
Totals	$174,854,273	$180,666,106	$151,614,404
Capital	$171,263,258	$177,051,531	$149,854,225
O&M	$ 3,591,015	$ 3,614,575	$ 1,760,179
Total Units	2,005	1,928	462

Cost Benefit Comparison

As provided in the Cost section above, the estimated cost for DEF's Structure Hardening Program during the 10-year planning horizon is approximately $1.6B Capital and $21M O&M.

After deployment of the 2026-2035 Structure Hardening Program work is complete, DEF estimates it will reduce the cost of extreme weather events on the Transmission system by approximately $19.7M to $24.6M annually based on today's costs.

After deployment of the 2026-2035 Structure Hardening Program work is complete, DEF estimates it will reduce Transmission MED CMI by approximately 22 million to 27 million minutes annually. CMI reduction is used as a proxy for reduction in extreme weather event duration for the average customer.

Transmission system damage can result in severe consequences in both cost and outage duration. The estimation of benefits represents an annual average expected value based on historical data and does not represent what could happen in individual events or scenarios in which severe damage occurs on critical parts of the Transmission system.

Prioritization Methodology

Work will be prioritized using the following processes:

1. Probability of Damage: To prioritize the work in the Florida regions, the Transmission and Distribution systems were modeled, and weather simulations were run to provide probabilistic exposure frequency for all asset locations. The weather modeling uses the FEMA Hazus and SLOSH models, which contain the weather data for storms over the last 200 years. Using the geographical locations of the Florida assets and the historic storm paths embedded in the Hazus model, a spatial correlation of future storm exposure can be derived. To determine probability of damage given that exposure, eight years of historical outage data was provided and correlated with the closest weather tower to determine the conditions during historic failures recorded in the outage data. Then, the expected quantities of asset failure for

simulated future weather exposure conditions was derived by combining simulated weather patterns with historical asset failure through conditional probability methods.

2. Consequence of Damage: Once the output of probabilistic damage is assessed, the probable impact to customers is considered. This step considers number of customers served by a given asset (e.g. each pole, or segment of conductor on a line), observed outage durations, the mix of customers, and critical facilities. This step is performed both for the existing configuration of each asset, and the hardened configuration resulting from completion of the Program. The difference between the existing condition and the hardened configuration is the program impact.
3. Transmission subject matter experts then use these outputs to determine the optimum deployment plan considering factors such as current projects in the area, critical customers, operational knowledge, and resource availability.

Year 1 Project List

DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS - WOOD POLE REPLACEMENTS

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
ALTAMONTE - SPRING LAKE 230KV	3	0*	184,422	3,903	2/2/2026	6/30/2026
EATONVILLE - SPRING LAKE 69KV	1	25,431	61,474	1,301	2/2/2026	6/30/2026
DEBARY PL - NORTH LONGWOOD 230KV	5	12,835	307,370	6,505	2/2/2026	6/30/2026
KATHLEEN - WIRE ROAD CKT#1 230KV	1	0*	61,474	1,301	2/2/2026	6/30/2026
PALM HARBOR - TARPON SPRINGS 69KV	1	9,601	61,474	1,301	2/2/2026	6/30/2026
16TH ST - 40TH ST 115KV	1	23,436	61,474	1,301	2/2/2026	6/30/2026
ALDERMAN - CURLEW 115KV	1	32,874	61,474	1,301	2/2/2026	6/30/2026
CENTRAL PLAZA - MAXIMO 115KV	15	32,540	922,110	19,515	2/2/2026	6/30/2026
DUNEDIN - PALM HARBOR 69KV	1	21,668	61,474	1,301	2/2/2026	6/30/2026
CAMP LAKE - GROVELAND 69KV	75	17,760	4,610,550	97,575	2/2/2026	6/30/2026
CENTRAL PARK - WINDERMERE 69KV	1	7,684	61,474	1,301	2/2/2026	6/30/2026
UMERTON WEST - WALSINGHAM 69KV	19	32,214	1,168,006	24,719	2/2/2026	6/30/2026
CAMP LAKE - CLERMONT 69KV	12	16,476	737,688	15,612	2/2/2026	6/30/2026
PASADENA - 51ST ST 115KV	1	33,863	61,474	1,301	2/2/2026	6/30/2026
FISHEATING CREEK - LAKE PLACID 69KV	3	8,921	184,422	3,903	2/2/2026	6/30/2026
BAYBORO - CENTRAL PLAZA 115KV	11	21,053	676,214	14,311	2/2/2026	6/30/2026
CLERMONT - CLERMONT EAST 69KV	8	10,554	491,792	10,408	2/2/2026	6/30/2026
ODESSA - TARPON SPRINGS 69KV	4	14,212	245,896	5,204	2/2/2026	6/30/2026
TURNER PL - DELTONA 115KV	15	31,262	922,110	19,515	2/2/2026	6/30/2026
DELAND WEST - ORANGE CITY 230KV	2	0*	122,948	2,602	2/2/2026	6/30/2026
CASSADAGA - DELTONA 115KV	2	25,265	122,948	2,602	2/2/2026	6/30/2026
PIEDMONT - SPRING LAKE 69KV	1	25,157	61,474	1,301	2/2/2026	6/30/2026
HAINES CITY - HAINES CITY EAST 69KV	10	15,109	614,740	13,010	2/2/2026	6/30/2026
ALTAMONTE - NORTH LONGWD CKT2 69KV	2	11,002	122,948	2,602	2/2/2026	6/30/2026
SEMINOLE - OAKHURST 69KV	4	31,843	245,896	5,204	2/2/2026	6/30/2026
LAKE WALES - W LAKE WALES CKT#2 69KV	3	9,325	184,422	3,903	2/2/2026	6/30/2026
DISSTON - STARKEY ROAD 69KV	1	13,774	61,474	1,301	2/2/2026	6/30/2026
CYPRESSWOOD - HAINES CITY 69KV	3	21,755**	184,422	3,903	2/2/2026	6/30/2026
EAST CLEARWATER - HIGHLANDS 69KV	6	39,548	368,844	7,806	2/2/2026	6/30/2026
DUNEDIN - HIGHLANDS 69KV	1	27,219	61,474	1,301	2/2/2026	6/30/2026

FOUR CORNERS - GIFFORD 69KV	2	14,067	122,948	2,602	2/2/2026	6/30/2026
MAITLAND - SPRING LAKE 69KV	13	24,618	799,162	16,913	2/2/2026	6/30/2026
AVON PARK PL - DESOTO CITY 69KV	3	9,341	184,422	3,903	2/2/2026	6/30/2026
AVON PARK PL - FT MEADE 230KV	2	0*	122,948	2,602	2/2/2026	6/30/2026
DOUGLAS AVE - SPRING LAKE 69KV	7	17,216	430,318	9,107	2/2/2026	6/30/2026
LARGO - TAYLOR AVE 69KV	2	29,386	122,948	2,602	2/2/2026	6/30/2026
ALAFAYA - UCF 69KV	2	20,718	122,948	2,602	2/2/2026	6/30/2026
N LONGWOOD - WINTER SPRINGS 69KV	6	14,335	368,844	7,806	2/2/2026	6/30/2026
LK LOUISA- CLERMONT E - WILDWD 69KV	5	11,810	307,370	6,505	2/2/2026	6/30/2026
LK LOUISA-CLERMONT E-HAINES CTY 69KV	1	11,810	61,474	1,301	2/2/2026	6/30/2026
DELAND - DELAND WEST 69KV	2	10,724	122,948	2,602	2/2/2026	6/30/2026
DINNER LAKES - SUN N LAKES 69KV	2	19,064	122,948	2,602	2/2/2026	6/30/2026
WINDERMERE - WOODSMERE 69KV	10	11,961	614,740	13,010	2/2/2026	6/30/2026
BAY HILL - ISLEWORTH 69KV	5	22,975	307,370	6,505	2/2/2026	6/30/2026
FT MEADE - SOUTH POLK 230KV	1	0*	61,474	1,301	2/2/2026	6/30/2026
BAY RIDGE - SORRENTO 69KV	3	8,466	184,422	3,903	6/30/2026	9/30/2026
LEESBURG - OKAHUMPKA 69KV	8	4,045	491,792	10,408	6/30/2026	9/30/2026
DALLAS - ORANGE BLOSSOM 69KV	10	9,822	614,740	13,010	6/30/2026	9/30/2026
CRYSTAL RIVER SOUTH - HOMOSASSA 115KV	2	3,878	122,948	2,602	6/30/2026	9/30/2026
CENTRAL FLA - ORANGE BLOSSOM 69KV	3	25,515	184,422	3,903	6/30/2026	9/30/2026
EUSTIS TAPLINE 69KV	5	1*	307,370	6,505	6/30/2026	9/30/2026
CRYSTAL RIVER S - TWIN CTY RANCH 115KV	2	17,440	122,948	2,602	6/30/2026	9/30/2026
MT DORA EAST SEC 69KV TAPLINE	11	5,050	676,214	14,311	6/30/2026	9/30/2026
FT MEADE - DRY PRAIRIE 230KV	64	1**	3,934,336	83,264	6/30/2026	9/30/2026
CRYSTAL RIVER NORTH TAPLINE 115KV	2	2,411	122,948	2,602	6/30/2026	9/30/2026
MT DORA EAST SEC 69KV	7	5,050	430,318	9,107	6/30/2026	9/30/2026
EUSTIS - UMATILLA 69KV	24	12,548	1,475,376	31,224	6/30/2026	9/30/2026
CRYSTAL RIVER TAPLINE 115KV	1	5,723	61,474	1,301	6/30/2026	9/30/2026
ENOLA - UMATILLA 69K	1	4,532	61,474	1,301	6/30/2026	9/30/2026
VANDOLAH - MYAKKA 69KV	7	3,063	430,318	9,107	6/30/2026	9/30/2026
BARBERVILLE - DELAND WEST DE 69KV	4	7,372	245,896	5,204	6/30/2026	9/30/2026
BARBERVILLE - DELAND WEST 69KV	4	7,372	245,896	5,204	6/30/2026	9/30/2026
TROPIC TERRACE TAPLINE 115KV	2	3,466	122,948	2,602	6/30/2026	9/30/2026
FT GREEN SPRINGS - FT MEADE 69KV	2	3,019**	122,948	2,602	6/30/2026	9/30/2026
BEVERLY HILLS - CITRUS HILLS LINE 115KV	3	15,105	184,422	3,903	6/30/2026	9/30/2026
COUNTRY OAKS - EAST LAKE WALES 69KV	1	10,873	61,474	1,301	6/30/2026	9/30/2026
CARRABELLE - CRAWFORDVILLE 69KV	82	9,490	5,040,868	106,682	6/30/2026	9/30/2026
HOWEY SEC - OKAHUMPKA 69KV	8	14,687	491,792	10,408	6/30/2026	9/30/2026
MURPHY ROAD PREC TAPLINE 69KV	14	1,889	860,636	18,214	6/30/2026	9/30/2026
BRADFORDVILLE WEST - TIE #3 115KV	27	0*	1,659,798	35,127	6/30/2026	9/30/2026
MCINTOSH TAPLINE 69KV	1	2,207	61,474	1,301	6/30/2026	9/30/2026
LAKE BRYAN WORLD GATEWAY 69KV	2	8,662	122,948	2,602	6/30/2026	9/30/2026
CROOKED LAKE TAPLINE 69KV	66	2,032	4,057,284	85,866	6/30/2026	9/30/2026
GA PACIFIC - WILCOX 69KV	1	1,425	61,474	1,301	6/30/2026	9/30/2026
BEVERLY HILLS - LECANTO 115KV	18	11,306	1,106,532	23,418	6/30/2026	9/30/2026
DRIFTON - HANSON 115KV	20	2,795	1,229,480	26,020	6/30/2026	9/30/2026

AVON PARK PL - SOUTH POLK 230KV	2	3**	122,948	2,602	6/30/2026	9/30/2026
BRADFORDVILLE WEST - RABON 115KV	35	0*	2,151,590	45,535	6/30/2026	9/30/2026
TAYLOR AVE - WALSINGHAM 69KV	10	32,849	614,740	13,010	6/30/2026	9/30/2026
SAND LAKE - WINDERMERE 69KV	8	5,736	491,792	10,408	6/30/2026	9/30/2026
MARTIN WEST - SILVER SPRINGS 69KV	48	12,182	2,950,752	62,448	6/30/2026	9/30/2026
CHIEFLAND-GA PACIFIC 69KV	1	0*	61,474	1,301	6/30/2026	9/30/2026
LEISURE LAKES TAPLINE 69KV	24	2,145	1,475,376	31,224	6/30/2026	9/30/2026
HAVANA - QUINCY 115KV	63	2,103	3,872,862	81,963	6/30/2026	9/30/2026
SUWANNEE RIVER PL - TWIN LAKES 115KV	10	0*	614,740	13,010	6/30/2026	9/30/2026
JASPER -HOMERVILLE 115KV	16	0*	983,584	20,816	6/30/2026	9/30/2026
NEWBERRY - TRENTON 69KV	8	5,340	491,792	10,408	6/30/2026	9/30/2026
BROOKRIDGE - TWIN COUNTY RANCH 115KV	14	6,107	860,636	18,214	6/30/2026	9/30/2026
ARCHER - WILLISTON 69KV	61	2,627	3,749,914	79,361	6/30/2026	9/30/2026
HANSON - CHERRY LAKE TREC 115KV	6	1,688	368,844	7,806	6/30/2026	9/30/2026
VANDOLAH - WAUCHULA 69KV	7	4,165	430,318	9,107	6/30/2026	9/30/2026
FORT GREEN #4 TAPLINE 69KV	6	1**	368,844	7,806	6/30/2026	9/30/2026
AIR PRODUCTS & CHEMICAL CO TAP 69KV	6	1**	368,844	7,806	6/30/2026	9/30/2026
AVON PARK PL - WAUCHULA 69KV	11	19,325	676,214	14,311	6/30/2026	9/30/2026
CROSS BAYOU - GE PINELLAS 69KV	15	14,178	922,110	19,515	6/30/2026	9/30/2026
OCC SWIFT CRK #1 - OCC MTRING 115KV	49	755**	3,012,226	63,749	6/30/2026	9/30/2026
CHIEFLAND - INGLIS 69KV	150	7,050	9,221,100	195,150	6/30/2026	9/30/2026
BROOKSVILLE WEST - HUDSON 115KV	9	26,521	553,266	11,709	6/30/2026	9/30/2026
FT MEADE - HOMELAND 69KV	10	2,783	614,740	13,010	6/30/2026	9/30/2026
FTO 69KV	45	1*	2,766,330	58,545	9/30/2026	12/4/2026
DALLAS AIRPORT - WILDWOOD 69KV	11	33,686	676,214	14,311	9/30/2026	12/4/2026
BROOKSVILLE - UNION HALL 69KV	18	16,939	1,106,532	23,418	9/30/2026	12/4/2026
ARCHER - HULL ROAD 69KV	44	5,929**	2,704,856	57,244	9/30/2026	12/4/2026
CRAWFORDVILLE - JACKSON BLUFF 69KV	12	2,784	737,688	15,612	9/30/2026	12/4/2026
IDYLWILD - UNIVERSITY FLA 69KV	16	2**	983,584	20,816	9/30/2026	12/4/2026
FT WHITE - JASPER 69KV	109	7,169	6,700,666	141,809	9/30/2026	12/4/2026
OCC SWIFT CRK #1 - #2 115KV	29	2**	1,782,746	37,729	9/30/2026	12/4/2026
FL GAS TRN EAST - WEWAHOOTEE 69KV	240	81**	14,753,760	312,240	9/30/2026	12/4/2026
TBD	155		9,528,470	214,665	9/30/2026	12/4/2026
ENGINEERING/MATERIALS FOR 2027 PROJECTS			401,420		1/30/2026	12/4/2026

*Notes: * Customer count is zero due to GRID Redundancy*
*** Customer count includes Industrial Customer*

DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS - TOWER REPLACEMENTS

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
SOUTH ELOISE (TECO) - WEST LAKE WALES	2	0*	525,024	5,852	2/23/2026	6/30/2026
CRAWFORDVILLE - ST MARKS EAST	38	0*	9,975,456	111,188	3/30/2026	9/30/2026
PERRY - SUWANNEE RIVER	36	0*	9,450,432	105,336	6/30/2026	11/30/2026

*Notes: * Customer count is zero due to GRID Redundancy*

DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS - CATHODIC PROTECTION

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
CRP CKT#2 - CITRUS CC CKT#2 230KV	12	0*	128,172	0	2/1/2026	6/30/2026
AVALON - WINDERMERE 230KV	4	0*	42,724	0	2/1/2026	6/30/2026
AVON PARK PL - FT MEADE 230KV	92	0*	982,652	0	2/1/2026	6/30/2026
ECON - WINTER PARK EAST 230KV	13	15,106	138,853	0	2/1/2026	6/30/2026
LAKE TARPON - PALM HARBOR 230KV	19	0*	202,939	0	2/1/2026	6/30/2026
LAKE TARPON -SEVEN SPRINGS 230KV	15	0*	160,215	0	2/1/2026	6/30/2026
LARGO - ULMERTON 230KV	25	0*	267,025	0	2/1/2026	6/30/2026
RIO PINAR PL - ECON 230KV	15	15,106	160,215	0	2/1/2026	6/30/2026
SILVER SPRG- SILVER SPRINGS N CKT1 230KV	7	0*	74,767	0	2/1/2026	6/30/2026
WINDERMERE - SOUTHWOOD 230KV	5	0*	53,405	0	2/1/2026	6/30/2026
WINTER PARK EAST - WINTER SPRINGS 230KV	17	16,122	181,577	0	2/1/2026	6/30/2026
WINDERMERE - WOODSMERE 230KV	11	0*	112,151	0	2/1/2026	6/30/2026

*Notes: * Customer count is zero due to GRID Redundancy*

DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS - GANG OPERATED AIR BREAK (GOAB)

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
LISBON TAP	1	7,479	1,778,776	0	3/1/2026	5/23/2026
BIG CREEK SEC TAP	1	29,596	1,778,776	0	2/23/2026	4/30/2026
ST AUGUSTINE TCEC TAP	1	4,900**	1,778,776	0	4/30/2026	6/30/2026
OCHLOCKONEE TAP	1	9,490	1,778,776	0	6/30/2026	9/30/2026
ENGINEERING/MATERIALS FOR 2027 PROJECT			444,692	0	1/30/2026	11/30/2026

*Notes: ** Customer count includes Industrial Customer*

DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS - OVERHEAD GROUND WIRES

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
CLEARWATER - EAST CLEARWATER	5.52	44,495	2,447,770	0	3/30/2026	9/30/2026
OAKHURST – WALSINGHAM	1.82	34,320	807,055	0	3/30/2026	9/30/2026
DELTONA - MONASTERRY	4.5	18,817	1,995,465	0	3/30/2026	9/30/2026
CASSADEGA - MONASTERRY	3.17	11,907	1,405,694	0	3/30/2026	9/30/2026
MAITLAND - KELLER	2.95	12,338	1,308,138	0	3/30/2026	9/30/2026
KELLER- SPRING LAKE	1.71	13,491	758,277	0	3/30/2026	9/30/2026
PIEDMONT- PLYMOUTH	8.07	16,975	3,429,689	0	3/30/2026	9/30/2026
ALTAMONTE - CASSELBERRY	3.46	30,436	1,532,343	0	3/30/2026	9/30/2026
DISSTON-KENNETH	3.19	37,106	1,414,563	0	3/30/2026	9/30/2026
N LONGWOOD – WINTER SPRINGS	2.95	27,170	1,308,138	0	3/30/2026	9/30/2026

DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS - GROUND PATROL INSPECTIONS

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
DINNER LAKES - SUN N LAKES 69KV	132	19,064	0	5,280	2/9/2026	11/30/2026
ALTAMONTE - MAITLAND 69KV	119	24,919	0	4,760	2/9/2026	11/30/2026
ALTAMONTE - NORTH LONGWOOD CKT1 69KV	70	18,088	0	2,800	2/9/2026	11/30/2026
ALTAMONTE - NORTH LONGWOOD CKT2 69KV	69	11,002	0	2,760	2/9/2026	11/30/2026
BARCOLA - WEST SUB 230KV	162	0*	0	6,480	2/9/2026	11/30/2026

BRADFORDVILLE WEST - DRIFTON 115KV	36	6,611	0	1,440	2/9/2026	11/30/2026
BROOKSVILLE - UNION HALL 69KV	239	16,939	0	9,560	2/9/2026	11/30/2026
BROOKSVILLE WEST - HUDSON 115KV	229	26,521	0	9,160	2/9/2026	11/30/2026
CELEBRATION WORLD GATEWAY 69KV	41	6,632	0	1,640	2/9/2026	11/30/2026
CLEARWATER - HIGHLANDS 69KV	50	35,251	0	2,000	2/9/2026	11/30/2026
CROOKED LAKE 69KV TAPLINE	83	2,032	0	3,320	2/9/2026	11/30/2026
CROSS BAYOU - DISSTON 69KV	60	14,177	0	2,400	2/9/2026	11/30/2026
CROSS BAYOU - GE PINELLAS 69KV	31	14,178	0	1,240	2/9/2026	11/30/2026
DAVENPORT - WEST DAVENPORT 69KV	57	21,739	0	2,280	2/9/2026	11/30/2026
DCP-1A TAP	63	0*	0	2,520	2/9/2026	11/30/2026
DELAND - DELAND WEST 69KV	78	10,724	0	3,120	2/9/2026	11/30/2026
DRIFTON - HANSON 115KV	23	2,795	0	920	2/9/2026	11/30/2026
EAST CLEARWATER - HIGHLANDS 69KV	61	39,548	0	2,440	2/9/2026	11/30/2026
EATONVILLE - WINTER PARK 69KV	97	16,131	0	3,880	2/9/2026	11/30/2026
EATONVILLE - WOODSMERE 69KV	47	20,215	0	1,880	2/9/2026	11/30/2026
ENOLA - UMATILLA 69KV	28	4,532	0	1,120	2/9/2026	11/30/2026
FOUR CORNERS - GIFFORD 69KV	41	14,067	0	1,640	2/9/2026	11/30/2026
FT GREEN SPRINGS - DUETTE PREC 69KV	249	821**	0	9,960	2/9/2026	11/30/2026
GE PINELLAS - LARGO 69KV	55	16,622	0	2,200	2/9/2026	11/30/2026
HAINES CITY EAST - PONICIAN 69KV	115	15,936	0	4,600	2/9/2026	11/30/2026
HAVANA - QUINCY 115KV	16	2,103	0	640	2/9/2026	11/30/2026
KATHLEEN - ZEPHYRHILLS NORTH 230KV	95	0*	0	3,800	2/9/2026	11/30/2026
LAKE BRYAN WORLD GATEWAY 69KV	25	8,662	0	1,000	2/9/2026	11/30/2026
LAKE WEIR - CENTRAL TOWER CEC 69KV	96	9,589	0	3,840	2/9/2026	11/30/2026
LARGO - TAYLOR AVE 69KV	56	29,386	0	2,240	2/9/2026	11/30/2026
LARGO - ULMERTON WEST 69KV	40	28,751	0	1,600	2/9/2026	11/30/2026
LYNNE CEC 69KV TAPLINE	54	5,619	0	2,160	2/9/2026	11/30/2026
MAITLAND - WINTER PARK 69KV	59	14,107	0	2,360	2/9/2026	11/30/2026
MARTIN WEST - SILVER SPRINGS 69KV	288	12,182	0	11,520	2/9/2026	11/30/2026
OVIEDO - WINTER SPRINGS 69KV	79	22,251	0	3,160	2/9/2026	11/30/2026
PALM HARBOR - TARPON SPRINGS 69KV	143	9,601	0	5,720	2/9/2026	11/30/2026
PASADENA - 51ST ST 115KV	50	33,863	0	2,000	2/9/2026	11/30/2026
ST JOHNS - UMATILLA 69KV	215	33,863	0	8,600	2/9/2026	11/30/2026
ST JOHNS SEC 69KV TAPLINE	9	2,653	0	360	2/9/2026	11/30/2026
TURNER PL - DELTONA 115KV	64	31,262	0	2,560	2/9/2026	11/30/2026
TURNER PL - ORANGE CITY 115KV	63	42,132	0	2,520	2/9/2026	11/30/2026
UNION HALL -DADE CITY 69KV	16	1*	0	640	2/9/2026	11/30/2026
ZEPHYRHILLS NORTH - DADE CITY 69KV	162	15,534	0	6,480	2/9/2026	11/30/2026
DALLAS - SILVER SPRINGS 230KV	64	0*	0	2,560	2/9/2026	11/30/2026
BELL CFEC 69KV	105	3,302	0	4,200	2/9/2026	11/30/2026
GINNIE - HIGH SPRINGS 69KV	41	3,132	0	1,640	2/9/2026	11/30/2026
FL GAS TRNSMN - MAGNOLIA RANCH 69KV	43	5,574**	0	1,720	2/9/2026	11/30/2026
HUDSON - NEW PORT RICHEY 115KV	133	39,634	0	5,320	2/9/2026	11/30/2026
BROOKRIDGE - LAKE TARPON 500KV	150	0*	0	6,000	2/9/2026	11/30/2026
LAKE TARPON - PALM HARBOR 230KV	58	0*	0	2,320	2/9/2026	11/30/2026
LAKE TARPON - ULMERTON 230KV	67	0*	0	2,680	2/9/2026	11/30/2026

LARGO - SEMINOLE 230KV	70	0*	0	2,800	2/9/2026	11/30/2026
LARGO - ULMERTON 230KV	28	0*	0	1,120	2/9/2026	11/30/2026
CENTRAL FLA - COLEMAN 69KV	70	17,334	0	2,800	2/9/2026	11/30/2026
CR SOUTH - TWIN COUNTY RANCH 115KV	5	17,440	0	200	2/9/2026	11/30/2026
ENOLA - LAKE COGEN 69KV	1	1*	0	40	2/9/2026	11/30/2026
HAVANA (TEC) REA TAPLINE 69KV	1	2,622	0	40	2/9/2026	11/30/2026
ATWATER - OAK GROVE TEC 115KV	6	923	0	240	2/9/2026	11/30/2026
FOLEY 69KV TAPLINE	1	6**	0	40	2/9/2026	11/30/2026
OTTER CREEK CFEC 69KV	1	2,524	0	40	2/9/2026	11/30/2026
FT MEADE - WEST LAKE WALES 230KV	168	0*	0	6,720	2/9/2026	11/30/2026
FT GREEN SPRINGS - VANDOLAH #1 CKT 69KV	82	2**	0	3,280	2/9/2026	11/30/2026
INVERNESS - LECANTO 115KV	132	1	0	5,280	2/9/2026	11/30/2026
BROOKSVILLE - FLORIDA ROCK 69KV	185	6,499**	0	7,400	2/9/2026	11/30/2026
CROOM WREC 69KV	1	147	0	40	2/9/2026	11/30/2026
HAMMOCK WREC 115KV	1	1,332	0	40	2/9/2026	11/30/2026
CENTRAL FLORIDA - CONTINENTAL (SEC) 69KV	11	16,756	0	440	2/9/2026	11/30/2026
CRP - CR4/5 STRING BUS 230KV	4	0*	0	160	2/9/2026	11/30/2026
CR4 - CRYSTAL RIVER PL STRING BUS 230KV	2	0*	0	80	2/9/2026	11/30/2026
NORTH LONGWOOD - SANFORD (FP&L)230KV	51	12,835	0	2,040	2/9/2026	11/30/2026
CENTRAL FLORIDA STRING BUS 230KV	9	0*	0	360	2/9/2026	11/30/2026
CITY OF LEESBURG AIRPORT SUB 69KV	4	1*	0	160	2/9/2026	11/30/2026
DEBARY PLANT STRAIN BUS #1 (UNITS 1-6) 230KV	4	0*	0	160	2/9/2026	11/30/2026
DELTONA - ORANGE CITY 115KV	56	24,228	0	2,240	2/9/2026	11/30/2026
FTO 69KV	57	1*	0	2,280	2/9/2026	11/30/2026
LAKE EMMA - WINTER SPRINGS 230KV	51	6,972	0	2,040	2/9/2026	11/30/2026
CHAIRES TEC 69KV TAPLINE	136	2,940	0	5,440	2/9/2026	11/30/2026
ST AUGUSTINE TCEC 69KV	6	711	0	240	2/9/2026	11/30/2026
ST MARKS EAST - ST MARKS WEST 69KV	7	2,070	0	280	2/9/2026	11/30/2026
DUNNELLON - DUNNELLON STRING BUS 69KV	1	6,100	0	40	2/9/2026	11/30/2026
HOLDER - HOLDER STRING BUS 1 230KV	3	0*	0	120	2/9/2026	11/30/2026
HOLDER - HOLDER STRING BUSS 230KV	1	0*	0	40	2/9/2026	11/30/2026
SUWANNEE TRNSMN - COLUMBIA (FPL) 115KV	3	0*	0	120	2/9/2026	11/30/2026
BRANFORD ROAD (CLAY) 115KV	68	4,455	0	2,720	2/9/2026	11/30/2026
CROFT SVEC 115KV	2	3,305	0	80	2/9/2026	11/30/2026
OLD TOWN NORTH SW STA - WILCOX 69KV	26	0*	0	1,040	2/9/2026	11/30/2026
WALKER SVEC 115KV	6	1,287	0	240	2/9/2026	11/30/2026
BARNUM CITY - CITRUS CITY 69KV	176	17,488	0	7,040	2/9/2026	11/30/2026
CITRUS CENTER - HAINES CITY EAST 230KV	10	0*	0	400	2/9/2026	11/30/2026
CONNERSVILLE (CITY OF BARTOW) 69KV	1	3,000	0	40	2/9/2026	11/30/2026
DUNDEE - HAINES CITY EAST 230KV	19	0*	0	760	2/9/2026	11/30/2026
INTERCESSION CITY DE-ENERGIZED 69KV	1	0*	0	40	2/9/2026	11/30/2026
KATHLEEN - KATHLEEN BNK #1 BUS 230KV	4	0*	0	160	2/9/2026	11/30/2026
SEBRING EAST 69KV	1	758	0	40	2/9/2026	11/30/2026
VANDOLAH - CHARLOTTE (FPL) 230KV	1	0*	0	40	2/9/2026	11/30/2026

CENTRAL PLAZA STRING BUS 115KV	7	8,901	0	280	2/9/2026	11/30/2026
DISSTON STRING BUS 1 230 KV	4	0*	0	160	2/9/2026	11/30/2026
DISSTON STRING BUSS 2 230 KV	1	0*	0	40	2/9/2026	11/30/2026
DISSTON STRING BUSS 230 KV	3	0*	0	120	2/9/2026	11/30/2026
BRKRIDGE - FL STONE COGEN PL 115KV	3	1**	0	120	2/9/2026	11/30/2026
FLORA MAR - NEW PORT RICHEY 115KV	33	28,921	0	1,320	2/9/2026	11/30/2026
HAMMOCK 69KV	1	1	0	40	2/9/2026	11/30/2026
HEXAM 115KV	1	10,396	0	40	2/9/2026	11/30/2026
OVERSTREET 115KV	1	14,150	0	40	2/9/2026	11/30/2026
SPRING HILL #3 115KV	4	6,634	0	160	2/9/2026	11/30/2026
SPRINGWOOD 115KV	1	6,333	0	40	2/9/2026	11/30/2026
TANGERINE 115KV	2	3,646	0	80	2/9/2026	11/30/2026
TBD	6040	0*	0	241,600	2/9/2026	11/30/2026

DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS - DRONE INSPECTIONS

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
CENTRAL FLA - KATHLEEN-HAINES CITY 500KV	120	0*	0	21,960	3/16/2026	9/30/2026
CENTRAL FLA - KATHLEEN - WILDWOOD 500KV	77	0*	0	14,091	3/16/2026	9/30/2026
CITRUS COMBINED CYCLE - BROOKRIDGE 500KV	1	0*	0	183	3/16/2026	9/30/2026
AVALON - WINDERMERE 230KV	7	0*	0	1,281	3/16/2026	9/30/2026
BROOKRIDGE - TWIN COUNTY RANCH 115KV	124	6,107	0	22,692	3/16/2026	9/30/2026
BROOKSVILLE - BROOKSVILLE WEST CKT#2 115KV	10	12,828	0	1,830	3/16/2026	9/30/2026
HUDSON - PASCO COUNTY RR 115KV	9	1**	0	1,647	3/16/2026	9/30/2026
BROOKSVILLE W - SILVERTHORNE WREC 115KV	39	17,949	0	7,137	3/16/2026	9/30/2026
BRKRIDGE - BROOKSVILLE W (BWX CKT) 115KV	33	0*	0	6,039	3/16/2026	9/30/2026
BRKRIDGE -FL CRUSHED STONE COGEN PL 115KV	3	1**	0	549	3/16/2026	9/30/2026
CROSS CITY - WILCOX 69KV	11	1,625	0	2,013	3/16/2026	9/30/2026
CCC CKT#2 - POWERLINE CKT#2 230KV	6	0*	0	1,098	3/16/2026	9/30/2026
CRP CKT#1 - CCC CKT#1 230KV	6	0*	0	1,098	3/16/2026	9/30/2026
HUDSON - RIVER RIDGE 230KV	91	0*	0	16,653	3/16/2026	9/30/2026
CCC CKT#2 - POWERLINE CKT#2 230KV	7	0*	0	1,281	3/16/2026	9/30/2026
HOLDER CKT#2 - POWERLINE CKT#2 230KV	3	0*	0	549	3/16/2026	9/30/2026
CENTRAL PLAZA-FIFTY FIRST STREET 115KV	31	25,338	0	5,673	3/16/2026	9/30/2026
CENTRAL PLAZA - MAXIMO 115KV	63	32,540	0	11,529	3/16/2026	9/30/2026
BEVERLY HILLS - LECANTO 115KV	125	11,306	0	22,875	3/16/2026	9/30/2026
PORT ST JOE - CALLAWAY 230KV	319	0*	0	58,377	3/16/2026	9/30/2026
REEDY LAKE - DISNEY WORLD NORTHWEST 69KV	54	11,297	0	9,882	3/16/2026	9/30/2026
AVALON - CAMP LAKE 230KV	2	0*	0	366	3/16/2026	9/30/2026
CAMP LAKE - GROVELAND 69KV	181	17,760	0	33,123	3/16/2026	9/30/2026
DELAND WEST - SILVER SPRINGS 230KV	143	0*	0	26,169	3/16/2026	9/30/2026

MONTICELLO - BOSTON 69KV	103	4,009	0	18,849	3/16/2026	9/30/2026
JASPER - TWIN LAKES LINE 69KV	155	1*	0	28,365	3/16/2026	9/30/2026
JASPER -HOMERVILLE 115KV	53	0*	0	9,699	3/16/2026	9/30/2026
QUINCY - ATTAPULGUS 69KV	113	1*	0	20,679	3/16/2026	9/30/2026
FT WHITE - SUWANNEE SPRINGS WEST CKT 115KV	111	2,869	0	20,313	3/16/2026	9/30/2026

Notes: ** Customer count is zero due to GRID Redundancy*
*** Customer count includes Industrial Customer*

Substation Flood Mitigation

Vision

Substation Flood Mitigation is a targeted program upgrading 11 sites with flood mitigation strategies, all identified as being at risk for significant flooding during extreme weather events. The Substation Flood Mitigation Program is now scheduled to begin in 2025 and estimated to take approximately 12 years to complete.

Description

The Substation Flood Mitigation program builds in protection for substations most vulnerable to flood damage using flood plain and storm surge data. It includes a systematic review and prioritization of substations at risk of flooding to determine the proper mitigation solution, which may include elevating or modifying equipment, or relocating substations altogether.

Flood mitigation will be a targeted application of mitigation measures for substations. New assets could include control houses, relays, or total station rebuilds to increase elevation, etc.

Cost

It is expected that the 10-year cost will be approximately $78M Capital. This would cover approximately 11 substations on the DEF system.

	DEF		
Substation Flood Mitigation	2026	2027	2028
Totals	$ 6,860,000	$ 6,860,000	$ 15,222,156
Capital	$ 6,860,000	$ 6,860,000	$ 15,222,156
O&M	$ -	$ -	$ -
Total Units	1	1	2

Cost Benefit Comparison

As provided in the Cost section above, the estimated cost for DEF's Substation Flood Mitigation Program during the 10-year planning horizon is approximately $78M Capital.

After deployment of the 2026-2035 Substation Flood Mitigation Program work is complete, DEF estimates it will reduce the cost of extreme weather events on the Transmission system by approximately $2.2M to $2.8M annually based on today's costs.

After deployment of the 2026-2035 Substation Flood Mitigation Program work is complete, DEF estimates it will reduce Transmission MED CMI by approximately 0.7 million to 0.9 million minutes annually. CMI reduction is used as a proxy for reduction in extreme weather event duration for the average customer.

Transmission system damage can result in severe consequences in both cost and outage duration. The estimation of benefits represents an annual average expected value based on historical data and do not represent what could happen in individual events or scenarios in which severe damage occurs on critical parts of the Transmission system.

Prioritization Methodology

Work will be prioritized using the following processes:

1. Probability of Damage: To prioritize the work in the Florida regions, the Transmission and Distribution systems were modeled, and weather simulations were run to provide probabilistic exposure frequency for all asset locations. The weather modeling uses the FEMA Hazus and SLOSH models, which contain the weather data for storms over the last 200 years. Using the geographical locations of the Florida assets and the historic storm paths embedded in the Hazus model, a spatial correlation of future storm exposure can be derived. To determine probability of damage given that exposure, eight years of historical outage data was provided and correlated with the closest weather tower to determine the conditions during historic failures recorded in the outage data. Then, the expected quantities of asset failure for simulated future weather exposure conditions was derived by combining simulated weather patterns with historical asset failure through conditional probability methods.
2. Consequence of Damage: Once the output of probabilistic damage is assessed, the probable impact to customers is considered. This step considers number of customers served by a given asset (e.g. each pole, or segment of conductor on a line), observed outage durations, the mix of customers, and critical facilities. This step is performed both for the existing configuration of each asset, and the hardened configuration resulting from completion of the program. The difference between the existing condition and the hardened configuration is the program impact.
3. Transmission subject matter experts then use these outputs to determine the optimum deployment plan considering factors such as current projects in the area, critical customers, operational knowledge, and resource availability.

Year 1 Project List

DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS - SUBSTATION FLOOD MITIGATION

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
HOMOSASSA SUBSTATION	1	2,767	6,860,000	0	2/23/2026	6/30/2026

Substation Hardening

Vision

The Substation Hardening Program began in 2023 and focuses on upgrading oil breakers and electromechanical relays. The Program will eliminate 317 oil breakers. It will also upgrade approximately 200 electromechanical relay groups to electronic relays to properly isolate line faults and reduce storm restoration duration by automating fault identification. The Substation Hardening Program is estimated to take approximately 15 years to complete from inception.

Description

Substation Hardening will address two major components:1) Upgrading oil breakers to state-of-the-art gas or vacuum breakers to mitigate the risk of catastrophic failure and extended outages during extreme weather events; and 2) Upgrading electromechanical relays to digital relays will provide communications and enable DEF to respond and restore service more quickly from extreme weather events.

Breaker Upgrades

Replacing oil circuit breakers with state-of-the-art breakers will result in the transmission system being able to more effectively and consistently isolate faults, reclose after momentary interruptions, and improve the customer experience through fewer interruptions. Oil circuit breakers are more unreliable than gas or vacuum breakers, especially in circumstances where they are operating numerous times over a short period, such as during extreme weather events. When oil circuit breakers are repeatedly called to operate, they can generate arcing gasses within the oil tank that can accumulate and result in catastrophic failure. Existing vintage oil breakers are less reliable when isolating line faults and can contribute to increased and longer customer outages when there is a failure.

Electronic Relays

The Electronic Relay upgrades eliminate noncommunicating electromechanical and solid-state relays with digital relays. Upgrading to modern relay designs with communication capabilities and microprocessor technologies will enable quicker restoration from outage events. Another benefit is increased overall system intelligence, which will improve restoration planning. One digital relay replaces a variety of legacy single-function electromechanical relays. Two-way communications and event recording capabilities allow them to provide device performance information following a system event to support continuous system design and operational improvements.

Grid automation will be implemented to reduce duration and impacts from system issues. Digital relays will be installed to add remote monitoring and operations to key assets, which allows for rapid service response and better protection and monitoring of equipment during extreme weather events. Restoration times will be reduced due to remote monitoring and control which will allow quicker pinpointing and resolution of issues.

Cost

The estimated 10-year cost for Substation Hardening Program is expected to be approximately $347M.

This would upgrade approximately 150 oil filled breakers and 130 relay groups on the DEF system.

	DEF		
Substation Hardening	**2026**	**2027**	**2028**
Totals	$ 22,178,190	$ 16,278,591	$ 35,099,889
Capital	$ 22,178,190	$ 16,278,591	$ 35,099,889
O&M	$ -	$ -	$ -
Total Units	18	14	31

Cost Benefit Comparison

As provided in the Cost section above, the estimated cost for DEF's Substation Hardening Program during the 10-year planning horizon is approximately $347M.

After deployment of the 2026-2035 Substation Hardening Program work is complete, DEF estimates it will reduce the cost of extreme weather events on the Transmission system by approximately $45k to $56k annually based on today's costs.

After deployment of the 2026-2035 Substation Hardening Program work is complete, DEF estimates it will reduce Transmission MED CMI by approximately 7 million to 9 million minutes annually. CMI reduction is used as a proxy for reduction in extreme weather event duration for the average customer.

Transmission system damage can result in severe consequences in both cost and outage duration. The estimation of benefits represents an annual average expected value based on historical data and do not represent what could happen in individual events or scenarios in which severe damage occurs on critical parts of the Transmission system.

Prioritization Methodology

Work will be prioritized using the following processes:

1. Probability of Damage: To prioritize the work in the Florida regions, the Transmission and Distribution systems were modeled, and weather simulations were run to provide probabilistic exposure frequency for all asset locations. The weather modeling uses the FEMA Hazus and SLOSH models, which contain the weather data for storms over the last 200 years. Using the geographical locations of the Florida assets and the historic storm paths embedded in the Hazus model, a spatial correlation of future storm exposure can be derived. To determine probability of damage given that exposure, eight years of historical outage data was provided and correlated with the closest weather tower to determine the conditions during historic failures recorded in the outage data. Then, the expected quantities of asset failure for simulated future weather exposure conditions was derived by combining simulated weather patterns with historical asset failure through conditional probability methods.
2. Consequence of Damage: Once the output of probabilistic damage is assessed, the probable impact to customers is considered. This step considers number of customers served by a given asset (e.g., each pole, or segment of conductor on a line), observed outage durations, the mix of customers, and critical facilities. This step is performed both for the existing configuration of each asset, and the hardened configuration at project completion. The

difference between the existing condition and the hardened configuration is the program impact.

3. Transmission subject matter experts then use these outputs to determine the optimum deployment plan considering factors such as current projects in the area, critical customers, operational knowledge, and resource availability.

Year 1 Project List

DUKE ENERGY FLORIDA 2026 PLANNED PROJECTS - SUBSTATION HARDENING

LOCATION	Unit Count	Customer Count	Capital Cost	O&M Cost	Start Date	Finish Date
BROOKSVILLE	6	6,495	5,873,700	0	3/30/2026	7/30/2026
WINTER PARK	9	2,980	8,810,550	0	2/23/2026	6/30/2026
DESOTO CITY	2	2,294	3,662,626	0	6/30/2026	9/30/2026
CYPRESSWOOD	1	6,645	1,831,314	0	9/30/2026	11/30/2026

Transmission Vegetation Management

Vision

DEF will continue to utilize Integrated Vegetation Management (IVM) to minimize the impact of vegetation on the transmission assets.

Description

DEF's Transmission IVM program is focused on ensuring the reliable operation of the transmission system by minimizing vegetation-related interruptions and adequate conductor-to-vegetation clearances, while maintaining compliance with regulatory, environmental, and safety requirements or standards. The program activities focus on the removal and/or control of incompatible vegetation within and along the right of way to minimize the risk of vegetation-related outages and ensure necessary access within all transmission line corridors. The IVM program includes the following activities: planned threat and condition-based work, reactive work that includes hazard tree mitigation, and floor management (herbicide, mowing, and hand cutting operation).

Cost

It is expected that the 10-year cost will be approximately $139M Capital and $143M O&M. This would cover the inspection and vegetation remediation activities. The estimated 3-year contractor ratio is 92%. The estimated 3-year utility personnel ratio is 8%.

2026-2028 Labor / Equipment Breakout		
	Labor	Equipment
Utility Personnel Totals	**$ 5,690,699**	**$ 299,511**
Capital	$ 2,949,254	$ 155,224
O&M	$ 2,741,445	$ 144,287
Contract Personnel Totals	**$ 49,627,294**	**$ 21,268,840**
Capital	$ 24,382,911	$ 10,449,819
O&M	$ 25,244,383	$ 10,819,021

	DEF		
VM - Transmission	**2026**	**2027**	**2028**
Totals	**$ 25,716,140**	**$ 23,918,317**	**$ 27,251,886**
Capital	$ 12,784,754	$ 11,606,419	$ 13,546,035
O&M	$ 12,931,386	$ 12,311,898	$ 13,705,851
Approximate Miles	550	550	550

Cost Benefit Comparison

The IVM program's planned threat and condition-based work includes danger tree identification and mitigation, reactive work that includes hazard tree mitigation, and floor management (herbicide, mowing, and hand cutting operation) to reduce event possibilities during extreme weather events and enhance overall system reliability.

Prioritization Methodology

Planned work for DEF is conditioned based and is prioritized and scheduled using threats and conditions identified through patrols, inspections and assessments while considering factors like the date of previous work activities and outage history. Set trigger distances identify incompatible vegetation within and outside the Transmission Right of Way that does not allow for safe or reliable operations of the transmission facilities under all operating conditions. These distances allow for approximately 6 years of typical vegetation re-growth and support minimum safe worker distances. As systems and technologies can be developed and implemented, DEF intends to leverage those technologies/systems and analytics to evaluate numerous variables coupled with local knowledge to optimize the risk-based planning and scheduling of work.

Revenue Requirements and Rate Impacts

Rule 25-6.030(3)(g): An estimate of the annual jurisdictional revenue requirements for each year of the Storm Protection Plan.

Estimated Annual Jurisdictional Revenue Requirements for Each Year of the Storm Protection Plan										
	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
($ Millions)	$ 368.6	$ 444.3	$ 519.0	$ 591.0	$ 662.8	$ 731.5	$ 799.8	$ 865.2	$ 929.2	$ 991.7

Rule 25-6.030(3)(h): An estimate of rate impacts for each of the first three years of the Storm Protection Plan for the utility's typical residential, commercial, and industrial customers.

Estimated SPP Rate Impacts	2026	2027	2028
(1) Typical Residential % Increase from prior year Bill	6.5%	5.9%	5.8%
(2) Typical Commercial % Increase from prior year Bill	5.2%-6.7%	4.7%-6.2%	4.7%-6.1%
(3) Typical Industrial % Increase from prior year Bill	3.9%-5.9%	3.5%-5.3%	3.4%-5.2%

Note: Residential Rate is based on $/1,000 kWh

Storm Protection Plan

Final Report

Prepared for:

DUKE ENERGY FLORIDA

Duke Energy Florida

Submitted by:

Guidehouse Inc.
101 S. Tryon Street
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Charlotte, NC 28202

Reference No.: 225061
December 6, 2024

guidehouse.com

Table of Contents

Disclaimer

Executive Summary

Duke Energy Florida (DEF) engaged Guidehouse Inc. (Guidehouse) to support the 2026 DEF Storm Protection Plan (referred to herein as SPP 2026). SPP 2026 builds upon DEF's previous plans – the 2020 DEF Storm Protection Plan (referred to herein as SPP 2020) and 2023 DEF Storm Protection Plan (referred to herein as SPP 2023) – to strengthen the electric grid infrastructure to better withstand extreme weather conditions and therefore improve overall service reliability. Guidehouse conducted analytical modeling to assist in assessing, prioritizing, and targeting cost-effective and beneficial grid strengthening solutions and locations.

This analysis occurred in the context of DEF's ongoing implementation of approved programs initiated or continued under SPP 2020 and SPP 2023. Specifically, the most recent data supporting the analysis reflects a grid that includes both: (1) assets that have already been strengthened through prior SPP projects and (2) existing, unhardened assets that may be upgraded in the future. In previous years, DEF selected SPP projects in part based on prioritizing higher benefit-cost ratios or project net present value (NPV), subject to engineering and desk reviews. In Guidehouse's SPP 2026 analysis, modeling results reflect the progress that DEF has made implementing the most beneficial projects until the time of this study. This study focuses exclusively on future enhancements relative to work already completed or in the process of being completed by DEF.

This document provides Guidehouse's data-driven recommendations for a strategic 10-year investment plan and corresponding detailed 3-year investment plan for DEF's SPP update. The recommended plan focuses on core programs deployed for the distribution system, transmission system, and vegetation management. These programs and associated projects are shown in this analysis to cost-effectively prevent or reduce the impacts of extreme weather events to DEF customers while enhancing the overall reliability of the electric system across DEF's service area.

DEF includes nine programs within the SPP, listed by major investment category in Table ES-1.

Table ES-1. List of SPP Programs

Category	SPP Program
Distribution	D1: Feeder Hardening
	D2: Lateral Hardening
	D3: Self-Optimizing Grid
	D4: Underground Flood Mitigation
Transmission	T1: Structure Hardening
	T2: Substation Flood Mitigation
	T3: Substation Hardening[1]
Vegetation Management	VM1: Distribution Vegetation Management
	VM2: Transmission Vegetation Management

Source: Guidehouse Inc.

[1] In past SPP analyses, the Substation Hardening program was referred to as "T4".

SPP Deployment Plan

In 2025, DEF will file its 10-year SPP for strengthening the electric grid infrastructure to better withstand extreme weather conditions and improve overall service reliability within its service area. Completion of many SPP programs will span beyond the 10-year timeline defined in DEF's SPP 2026 regulatory filing. This is referred to as "full deployment" or "full remaining deployment." Full deployment in the context of SPP 2026 means deploying all programs across all remaining assets and/or locations not hardened or upgraded as part of efforts associated with SPP 2020 or SPP 2023. For this assessment, the Guidehouse project team regarded completion of 3-year (2026 to 2028) and 10-year (2026 to 2035) plans as milestones towards achieving the greater benefits of a longer-range, fully hardened electric system.

After deployment of the 10-year plan, the extreme weather protection and reliability improvements offered by SPP 2026 will produce significant ongoing benefits to DEF customers. The annual average benefits expected from the SPP investments include expected avoided restoration costs and reduced customer minutes of interruption (CMI).[2]

Table ES-2 and Table ES-3 highlight the average annual avoided restoration costs and CMI reductions, respectively, for major event days (MEDs). All tables and figures in this report represent simulated (modeled) results and projections based on assumptions made and data available at the time of this analysis, and thus may deviate from actual spending and program achievement. The restoration costs and CMI reductions are probabilistic estimates based on the most up-to-date versions of historical data related to extreme weather events observed in Florida that are available from the National Oceanic and Atmospheric Administration at the time of this study.[3] These are average expected impacts for each future year. The range observed in historical hurricane intensities year by year is large, thus variations in actual future year-to-year impacts are nearly certain and will depend on the actual storm frequencies and intensities each season. Note that there are no Avoided Restoration Costs or CMI Reduction benefits explicitly tied to Vegetation Management programs, as these benefits are captured in the totals for Distribution and Transmission programs.

Table ES-2. Estimated Annual Avoided Restoration Costs for the 10-year SPP

	Normal Storm Frequency	High Storm Frequency
	Annual Avoided Restoration Costs	Annual Avoided Restoration Costs
Program Category	2026 Dollars per Year	2026 Dollars per Year
Distribution	$27.9 million	$34.8 million
Transmission	$21.9 million	$27.5 million

Source: Guidehouse, Inc.

Table ES-3. Estimated Annual CMI Reduction for the 10-year SPP

	Normal Storm Frequency	High Storm Frequency
	Annual CMI Reduction	Annual CMI Reduction

[2] Expected benefits are estimated based on an analysis of data available at the time of Guidehouse's analysis and may vary according to actual deployment and varying future weather conditions.

[3] The most recent data includes 172 years of data related to historical hurricanes.

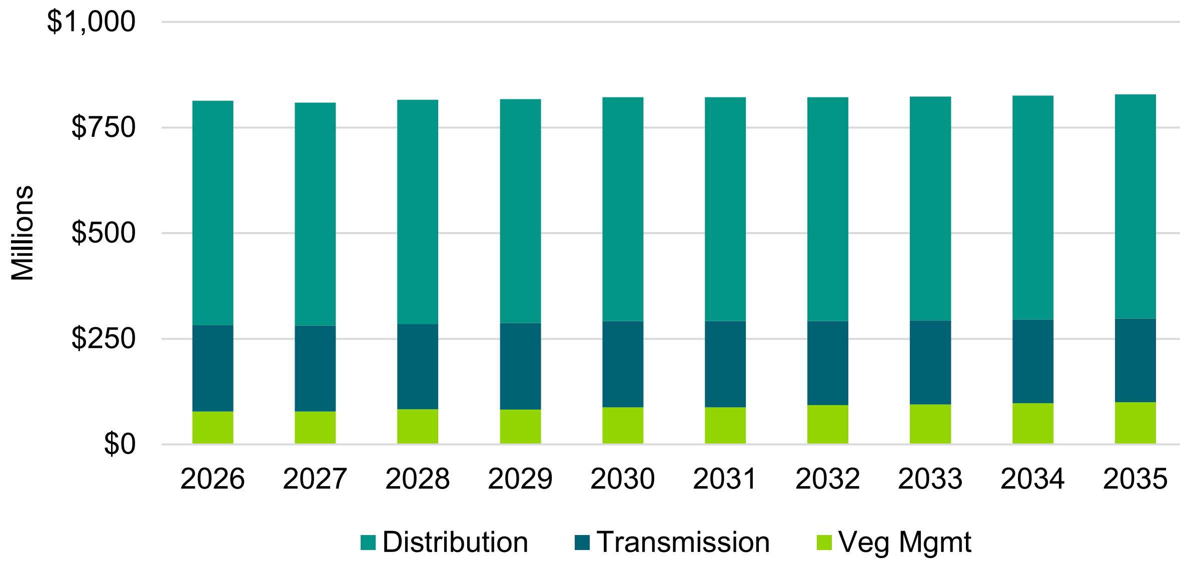
Program Category	Minutes per Year	Minutes per Year
Distribution	204.9 million	256.2 million
Transmission	29.4 million	36.7 million

Source: Guidehouse, Inc.

10-Year SPP Roadmap

DEF estimates a total investment of $8.2 billion in capital and associated O&M to deploy its proposed 10-year SPP. Forecasted annual capital and O&M expenditure by distribution, transmission, and vegetation management programs is depicted in Figure ES-1.

Figure ES-1. SPP 10-Year Investment by Major Category



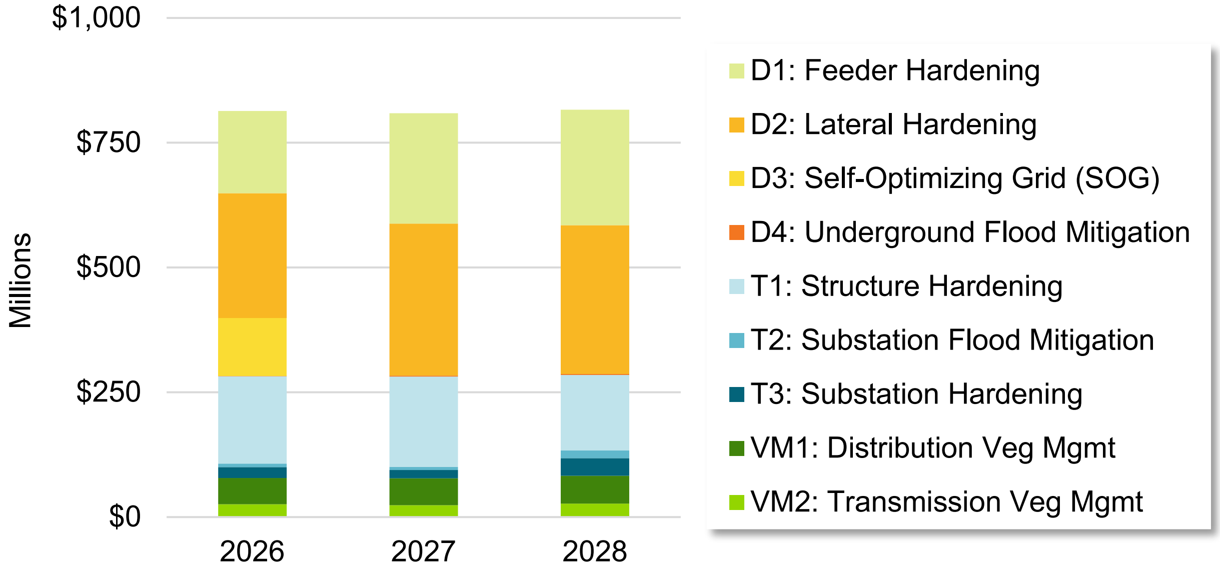
Source: Guidehouse, Inc.

The majority of this spending is targeted on the distribution system to address those portions of the grid that are most vulnerable to extreme weather events.

3-Year SPP Details

Over the next 3 years, DEF estimates a total SPP investment of approximately $2.4 billion in capital and associated O&M, as depicted in Figure ES-2.

Figure ES-2. SPP 3-Year Investment by Program



Source: Guidehouse, Inc.

The body of this report details the estimated investment and expected activities associated with each of these SPP programs.

1. Introduction

Duke Energy Florida (DEF) engaged Guidehouse Inc. (Guidehouse) to support the 2026 DEF Storm Protection Plan (referred to herein as SPP 2026). SPP 2026 builds upon DEF's previous plans – the 2020 DEF Storm Protection Plan (referred to herein as SPP 2020) and 2023 DEF Storm Protection Plan (referred to herein as SPP 2023) – to strengthen the electric grid infrastructure to better withstand extreme weather conditions and therefore improve overall service reliability. Guidehouse conducted detailed analytical modeling to assist in prioritizing and targeting the most cost-effective and beneficial grid strengthening solutions. The analysis builds on the methods used for SPP 2020 and SPP 2023 and incorporates updated data that is currently available.

SPP 2026 focuses on core programs that are deployed for the distribution system, the transmission system, and vegetation management. Using advanced modeling techniques and detailed equipment characteristic and geographic data, these programs and associated projects are demonstrated to cost-effectively prevent or reduce the impacts of extreme weather events to DEF customers while enhancing the overall reliability of the electric system across DEF's service area.

This document provides Guidehouse's recommendations for:

- Strategic 10-year investment plan for the DEF SPP (Section 2)
- Detailed 3-year investment plan for the DEF SPP (Section 3)

To support these recommendations, this report includes a summary of analyses related to impacted assets, costs, and expected benefits. Guidehouse assessed empirical data from DEF, academic research, industry, and national weather databases to model and validate the locational impacts of various extreme weather conditions on different equipment. Guidehouse then estimated the anticipated reduction in restoration costs and outage times associated with different investment solutions, to form a set of prioritized SPP recommendations.

All values, including all tables and figures presented in this report, reflect outputs from Guidehouse's modeling of probabilistic extreme weather impacts and simulation of the DEF system for purposes of the SPP. This includes program costs and benefits that reflect financial and economic assumptions made at the time of analysis, the snapshot of DEF's transmission and distribution systems at the time of analysis, and all available weather data at the time of analysis. As a result, modeled program spending and achievement may differ from costs and benefits observed at the time of implementation.

Guidehouse references the following data sources in the modeling, analysis, and validation of DEF's SPP programs:

- GIS data (DEF-specific)
- Asset management data (DEF-specific)
- Outage management system data (DEF-specific)

- Fragility analysis data[4,5,6]
- Inspection data (DEF-specific)
- Historic storm reports (DEF-specific)
- Vegetation coverage data (DEF-specific)
- Historic hourly National Oceanic and Atmospheric Administration (NOAA) weather data from 89 weather stations[7] relevant to DEFs territory
- Predictive windspeed frequency models
- Predictive flood frequency models
- Customer and load data (DEF-specific)
- Customer value of unserved energy
- Financial and other miscellaneous data[8]

Section 3 provides program-specific modeling assumptions included in Guidehouse's recommended investment plan. DEF engineering and planning personnel, regional staff, and other subject matter experts will be able to use the results of this analysis to inform detailed planning, design-level analysis, and considerations on resource availability.

Appendices to this report provide additional detail regarding this analysis, including:

- Appendix A: Modeling methodology
- Appendix B: Weather and storm scenario modeling
- Appendix C: Definitions of SPP programs

1.1 SPP Deployment Benefits

Guidehouse performed analysis conducted for SPP 2026 in the context of DEF's ongoing efforts to implement approved programs initiated under its previous Storm Protection Plans (SPP 2020 and SPP 2023). As a result, the most recently available dataset supporting this analysis reflects a grid that has undergone significant enhancements in recent years.

Specifically, the grid now includes a mix of: (1) assets that have already been strengthened through the implementation of prior SPP projects; and (2) existing, unhardened assets that may

[4] Panteli, Mathaios, et al. "Power system resilience to extreme weather: fragility modeling, probabilistic impact assessment, and adaptation measures." *IEEE Transactions on Power Systems* 32.5 (2016): 3747-3757.;

[5] Guikema, Seth, and Roshanak Nateghi. "Modeling power outage risk from natural hazards." *Oxford Research Encyclopedia of Natural Hazard Science*. 2018.

[6] Darestani, YM and Shafieezadeh A. "Multi-dimensional wind fragility functions for wood utility poles". Engineering Structures 183 (2019): 937-948.

[7] NOAA is an agency within the US Department of Commerce that focuses on understanding, predicting, and information sharing on the conditions of the oceans, atmosphere, and related ecosystems. This number of weather stations represents the count after filtering to valid active weather stations with data available, and within the DEF service territory.

[8] This includes inflation rates, DEF's weighted average cost of capital (WACC), valuation horizons, and more.

be eligible for future upgrades. In previous years, DEF selected SPP projects at least partially based on prioritizing higher benefit-cost ratios or project net present value (NPV). In Guidehouse's SPP 2026 modeling results reflect the progress that DEF has made implementing the most beneficial projects. Since the baseline reflects the benefits received from these previously completed projects , this study provides a comprehensive understanding of the current state of the grid and identifies opportunities for future enhancements.

To ensure a clear focus on future enhancements and to avoid any overstatement of costs or benefits, work that has already been completed by DEF under SPP 2020 and SPP 2023 is incorporated into the baseline and thus, not applicable for redundant upgrades in the model. This approach allows for a targeted evaluation of the remaining opportunities for grid hardening, enabling the identification of net-new projects for inclusion in the SPP 2026 simulated program deployment.

While the 10-year SPP 2026 filing provides a robust framework for DEF's grid hardening efforts, the actual completion of many SPP programs will extend beyond this timeline. This longer-term implementation is referred to as "full deployment" or "full remaining deployment." In the context of SPP 2026, full deployment means the comprehensive implementation of all programs across all remaining assets and locations that have not been hardened or upgraded as part of previous SPP efforts (SPP 2020 and SPP 2023). In light of these varied timelines and the need to prioritize activities across programs, the Guidehouse project team evaluated the costs and benefits of SPP 2026 implementation over 2 key milestones: the 3-year plan (2026 to 2028) and the 10-year plan (2026 to 2035). These milestones serve as intermediate targets towards achieving the goal of a fully hardened and reliable electric system.

When remaining projects are fully deployed, the extreme weather protection and reliability improvements offered by the SPP will produce significant ongoing benefits to DEF customers. Table 1 and Table 2 highlight the estimated annual avoided restoration costs and reduced customer minutes of interruption (CMI), respectively, given the normal expected storm frequency and the potential for high storm frequency. Note that there are no Avoided Restoration Costs or CMI Reduction benefits explicitly tied to Vegetation Management programs, as these benefits are captured in the totals for Distribution and Transmission programs.

Table 1. Estimated Annual Avoided Restoration Costs for the 10-year SPP

	Normal Storm Frequency	High Storm Frequency
Program Category	**Annual Avoided Restoration Costs 2026 Dollars per Year**	**Annual Avoided Restoration Costs 2026 Dollars per Year**
Distribution	$27.9 million	$34.8 million
Transmission	$21.9 million	$27.5 million

Source: Guidehouse, Inc.

Table 2. Estimated Annual CMI Reduction for the 10-year SPP

	Normal Storm Frequency	High Storm Frequency
	Annual CMI Reduction	**Annual CMI Reduction**
Program Category	**Minutes per Year**	**Minutes per Year**
Distribution	204.9 million	256.2 million
Transmission	29.4 million	36.7 million

Source: Guidehouse, Inc.

Upon full deployment of SPP 2026, under normal storm frequency, DEF can expect an estimated $49.8 million annually in avoided storm restoration costs, and an estimated annual reduction of about 234.3 million CMI. The restoration costs and CMI reductions are probabilistic estimates based on the most up-to-date version of historical data related to extreme weather events observed in Florida that are available from the National Oceanic and Atmospheric Administration (NOAA). These estimates are average expected impacts for each future year and there will be variations year-to-year depending on the actual observed storm frequencies and intensities.

To support this analysis, Guidehouse used data from storm damage experienced by DEF assets since 2014, as well as customer outage data collected over this same period. The normal storm frequency referenced in the tables above considers the weather conditions most likely to be experienced across the DEF service territory each year based on the most up-to-date historical weather data available from NOAA.[9] Should storm activity intensify or become more frequent, the SPP would deliver even more value in avoided restoration costs and CMI reduction.

The sections below provide details on the 10-year and 3-year portions of Guidehouse's SPP recommendations.

[9] Storm frequencies were derived from HAZUS MH model runs. See www.fema.gov/hazus, msc.fema.gov/portal/home, and Schneider, Philip J., and Barbara A. Schauer. "HAZUS—its development and its future." Natural Hazards Review 7.2 (2006): 40-44.

1.2 Program Categorization

Guidehouse evaluated hundreds of asset types as part of the SPP analysis and modeling. The project team categorized SPP programs into three program types defined in Table 3: standards-based, targeted, and enabling. The team used these program types in the analysis and modeling activities to drive how individual projects within each program are prioritized into the 10-year and 3-year investment plans.

Table 3. SPP Program Types

Program Type	Description
Standards-based	Programs that leverage standards to specify the hardening approach and to determine the conditions (including locational specifics, system characteristics, and vulnerabilities) that are eligible for deployment.
Targeted	Programs that seek to harden specific areas of the system that have specific characteristics (e.g., flood-prone areas) that merit deployment at those locations.
Enabling	Programs that are necessary to maintain the resiliency of the system and that require continuous application to be effective.

Source: Guidehouse, Inc.

1.3 Program List

Table 4 lists the programs considered in the SPP analysis, the categories to which they belong, and their associated program types.

Table 4. DEF SPP Programs

Category	SPP Program	Program Type
Distribution	D1: Feeder Hardening	Standards-based
	D2: Lateral Hardening	Standards-based
	D3: Self-Optimizing Grid	Standards-based
	D4: Underground Flood Mitigation	Targeted
Transmission	T1: Structure Hardening	Standards-based
	T2: Substation Flood Mitigation	Targeted
	T3: Substation Hardening[10]	Standards-based
Vegetation Management	VM1: Distribution Vegetation Management	Enabling
	VM2: Transmission Vegetation Management	Enabling

Source: Guidehouse, Inc.

Appendix C describes each program and how they were considered in the analysis process. Section 2 and Section 3 detail Guidehouse's recommended 10-year and 3-year investment plans.

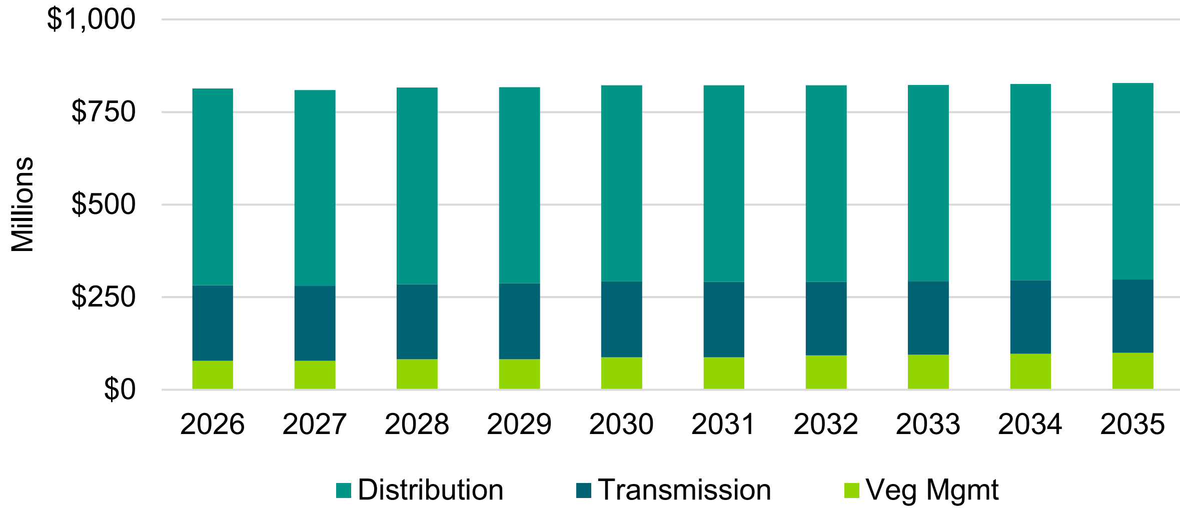
[10] In past SPP analyses, the Substation Hardening program was referred to as "T4".

Section 3 also offers additional details for each individual program and their associated extreme weather benefits.

2. Storm Protection Plan 10-Year Investment Plan

The recommended transmission and distribution storm protection plan covering the immediate 10-year planning period based on Guidehouse's modeling analysis, which spans 2026 through 2035, would require an estimated total investment of $8.2 billion in capital and associated O&M. Figure 1 shows this investment by year and investment category.

Figure 1. SPP Investment by Category Over 10 Years



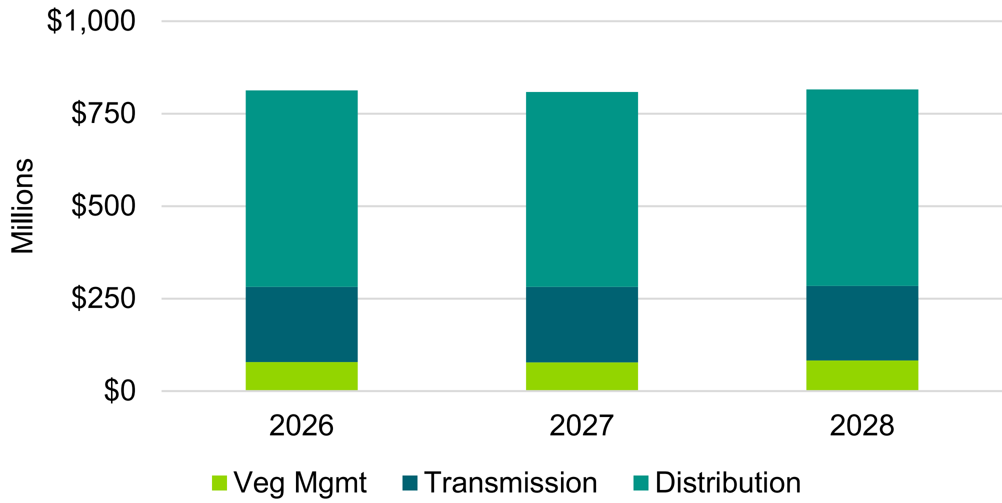
Source: Guidehouse, Inc.

The majority of this expenditure is targeted on the distribution system to address the portions of the grid that are most vulnerable to extreme weather events. See Appendix C for detailed program definitions for Distribution, Transmission, and Vegetation Management.

3. Storm Protection Plan 3-Year Investment Details

The following subsections provide a detailed program-level view of the next 3 years of this SPP, 2026 through 2028. A total of approximately $2.4 billion in capital and O&M for SPP investments is estimated by Guidehouse's analysis over the 3-year period, as shown in Figure 2.

Figure 2. SPP 3-Year Investment by Major Category



Source: Guidehouse, Inc.

Guidehouse used program definition details provided by DEF subject matter experts to define the program quantitatively within the modeling and analysis approach. These details allowed the analysts to assess program costs, estimate benefits, and develop recommended program prioritization. A brief overview of program definitions is provided to facilitate understanding of the Guidehouse assessment teams' results.

3.1 Distribution Programs

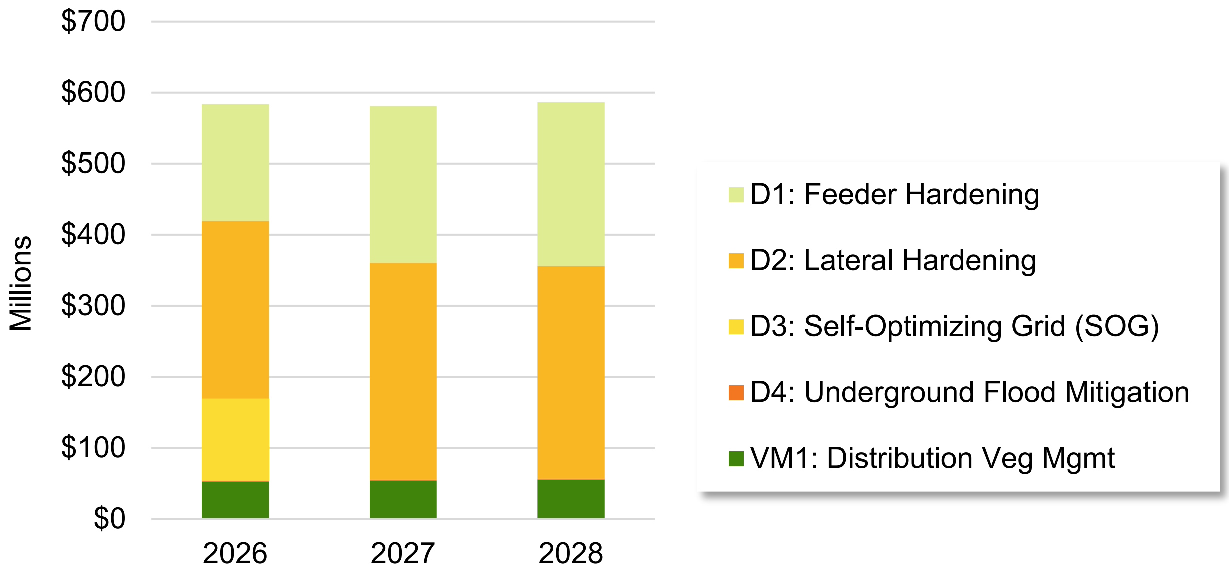
Distribution programs are proactive actions designed to upgrade the capabilities and resilience of distribution assets, which reduce system and customer outages and susceptibility to extreme weather events. These actions can be generally categorized as one or more of the following:

- Accelerated replacement of prioritized infrastructure assets to lower the risk of failures during extreme weather conditions.
- Structure hardening to decrease susceptibility to extreme weather and wind damage to infrastructure through replacing and upgrading to current engineering standards, and relocation to more accessible locations for repair crews and undergrounding to avoid tree-related outages.
- Installation of automation technologies to improve system measurement, monitoring, and control and installation of alternate distribution line sources to provide system redundancy to reduce outages and improve operational efficiency.

- Proactive preventive and corrective maintenance programs to evaluate and mitigate asset deterioration to avoid equipment failures.

Figure 3 shows a breakout of investment for the individual distribution programs, and Table 5 contains the specific investment dollars by year.

Figure 3. Distribution Programs Summary Spend by Year



Source: Guidehouse, Inc.

Table 5. Distribution SPP Programs Investment for 2026 Through 2028

Distribution SPP Programs	2026	2027	2028
D1: Feeder Hardening	$164.5M	$220.9M	$230.9M
D2: Lateral Hardening	$249.9M	$304.8M	$298.7M
D3: Self-Optimizing Grid	$115.4M	-	-
D4: Underground Flood Mitigation	$1.5M	$1.5M	$1.6M
VM1: Distribution Vegetation Management	$52.4M	$54.0M	$55.6M

Notes: Amounts shown for each program reflect the capital investment and associated O&M spend required. Guidehouse's use of bottom-up modeling methodology may result in slight variations from reported budgeted spend amounts. Please see Appendix A for a description of Guidehouse's modeling methodology.
Source: Guidehouse, Inc.

Guidehouse's analysis estimates a total of approximately $1.8 billion in capital and O&M for SPP distribution investments (including distribution vegetation management) over the 3-year period, 2026 through 2028.

3.1.1 D1: Feeder Hardening

The Feeder Hardening program is a standards-based program that systematically upgrades the feeder backbone to meet extreme wind loading requirements defined in the National Electric

Safety Code (NESC) Rule 250C. This upgrade enables the feeder backbone to better withstand extreme weather events.

Work includes strengthening structures, updating basic insulation level to current standards, updating the conductor to current standards, relocating difficult-to-access facilities, undergrounding sections of the feeder to mitigate clearance encroachments, and replacing oil-filled equipment. As part of this program, poles supporting the feeder backbone line undergo strength testing, and inspection. Depending on the results of the inspection, poles showing signs of decay will be treated or replaced.

Table 6 outlines the investments and scale of the Distribution Feeder Hardening program included in the SPP.

Table 6. Distribution Feeder Hardening Program (3-Year Plan)

D1: Feeder Hardening	2026	2027	2028
SPP Program Investment	$164.5M	$220.9M	$230.9M
Approx. No. of SPP Projects	26	30	28
Approx. No. of Line Miles	105	144	146

Notes: Guidehouse's prioritization methodology may result in variations from other reported estimated line miles and unit counts for future years. Please see Appendix A for a description of Guidehouse's modeling methodology.
Source: Guidehouse, Inc.

3.1.2 D2: Lateral Hardening

The Lateral Hardening standards-based program has two strategies: Lateral Undergrounding and Lateral Overhead Hardening.

The Lateral Undergrounding strategy focuses on branch lines that historically experience the most outage events, contain significantly aged assets, are susceptible to damage from vegetation, and/or often have facilities that are inaccessible to trucks. These branch lines will be replaced with a modern, updated, and standard underground design of today. Relocating lateral segments underground greatly reduces both damage costs and outage durations for DEF customers.

The Lateral Overhead Hardening strategy will include structure strengthening, deteriorated conductor replacement, removing open secondary wires, replacing fuses with automated line devices, pole replacement (when needed), line relocation, and hazard tree removal.

Lateral branch line poles also receive inspection and preventive maintenance to identify wood poles that are showing signs of decay or that fall below the minimum strength requirements. Decayed poles with reduced structural integrity are identified for replacement or treated for pole life extension.

Table 7 outlines the investments and scale of the Distribution Lateral Hardening program included in the SPP.

Table 7. Distribution Lateral Hardening Program (3-Year Plan)

D2: Lateral Hardening	2026	2027	2028
SPP Program Investment	$249.9M	$304.8M	$298.7M
Approx. No. of SPP Projects	36	45	33
Approx. Underground Line Miles	47.5	53.9	59.0
Approx. Overhead of Line Miles	77.0	83.0	77.5

Notes: Guidehouse's prioritization methodology may result in variations from other reported estimated line miles and unit counts for future years. Please see Appendix A for a description of Guidehouse's modeling methodology.
Source: Guidehouse, Inc.

3.1.3 D3: Self-Optimizing Grid

The Self-Optimizing Grid (SOG) program consists of three major components: capacity, connectivity, and automation and intelligence. SOG is a standards-based program that redesigns portions of the distribution system into a dynamic smart-thinking, self-healing network. SOG equips the grid with the ability to automatically reroute power around trouble areas, such as contact between a fallen tree and a power line, to quickly restore power to the maximum number of customers and rapidly dispatch line crews directly to the source of the outage. Completion of the SOG program will result in an overall reduction in the number of customers affected by outages and the duration of outages stemming from extreme weather events.

Table 8 outlines the investments and scale of the SOG program included in this SPP. No investment or projects are currently projected past 2026, as DEF is expecting to achieve SOG automation on 80% of the existing Distribution system. Actual program completion will depend on multiple factors including availability of labor, materials, and DEF personnel, as well as potential program continuation to a greater proportion of the Distribution system.

Table 8. SOG Program (3-Year Plan)

D3: Self-Optimizing Grid	2026	2027	2028
SPP Program Investment	$115.4M	-	-
Approx. No. of SPP Projects	190	-	-

Notes: Guidehouse's prioritization methodology may result in variations from other reported estimated unit counts for future years. Please see Appendix A for a description of Guidehouse's modeling methodology. The number of projects shown above represents the number of circuits impacted, not the number of automated devices.
Source: Guidehouse, Inc.

3.1.4 D4: Underground Flood Mitigation

Underground Flood Mitigation is a targeted program which will harden existing underground lines and equipment to better withstand a storm surge in flood prone areas. The primary purpose of this hardening activity is to minimize the damage caused by a storm surge to the equipment and thus expedite restoration after the storm surge has receded.

Table 9 outlines the investments and scale of the Underground Flood Mitigation program included in the SPP.

Table 9. Underground Flood Mitigation Program (3-Year Plan)

D4: Underground Flood Mitigation	2026	2027	2028
SPP Program Investment	$1.5M	$1.5M	$1.6M
Approx. No. of SPP Projects	1	0	0

Notes: Guidehouse's prioritization methodology may result in variations from other reported estimated line miles and unit counts for future years. Please see Appendix A for a description of Guidehouse's modeling methodology. The number of projects shown above represents the number of circuits impacted, not the number of units.

Source: Guidehouse, Inc.

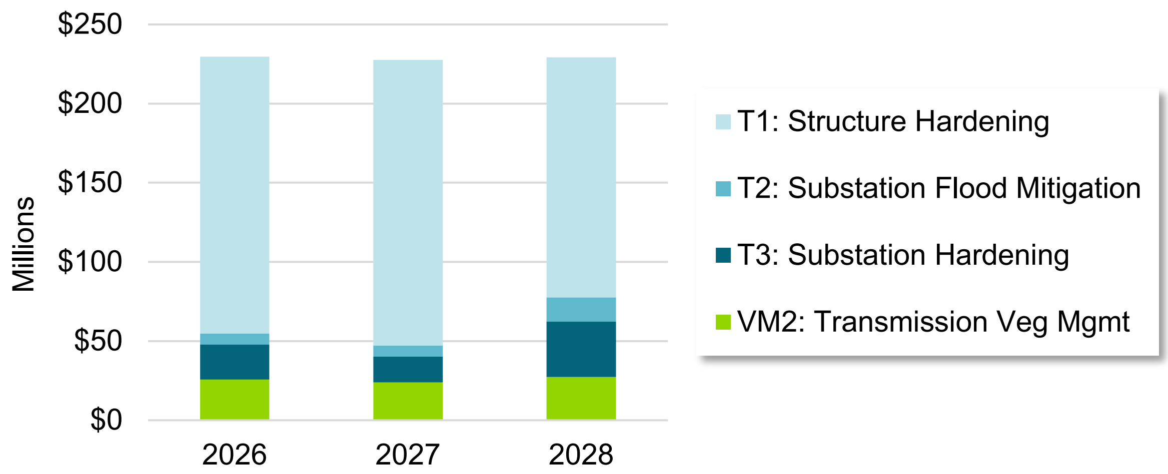
3.2 Transmission Programs

Transmission programs are designed to upgrade the capabilities, improve service reliability, and resiliency of transmission assets to reduce system and customer outages and susceptibility to extreme weather events. Some key actions include the following:

- Accelerated replacement of prioritized infrastructure assets to lower the risk of in-service failures during extreme weather conditions.
- Structure hardening to decrease susceptibility to extreme weather and wind damage to infrastructure through replacement and upgrading to current engineering standards.
- Installation of automation technologies to improve system measurement, monitoring, and control.
- Proactive inspections and preventive maintenance programs to evaluate and mitigate asset deterioration to avoid asset failures and capture detailed condition data.

Figure 4 shows a breakout of investment for the individual transmission programs, and Table 10 contains the specific investment dollars by year.

Figure 4. Transmission Programs Summary Spend by Year



Source: Guidehouse, Inc.

Table 10. Transmission SPP Programs Investment for 2026 Through 2028

Transmission SPP Programs	2026	2027	2028
T1: Structure Hardening	$174.8M	$180.6M	$151.6M
T2: Substation Flood Mitigation	$6.9M	$6.9M	$15.2M
T3: Substation Hardening	$22.2M	$16.3M	$35.1M
VM2: Transmission Vegetation Management	$25.7M	$23.9M	$27.3M

Notes: Amounts shown for each program reflect the capital investment and associated O&M spend. Guidehouse's use of bottom-up modeling methodology may result in slight variations from reported budgeted spend amounts. Please see Appendix A for a description of Guidehouse's modeling methodology.

Source: Guidehouse, Inc.

Guidehouse's analysis estimates a total of approximately $686.4 million in capital and O&M for SPP transmission investments (including transmission vegetation management) over the 3-year period, 2026 through 2028.

3.2.1 T1: Structure Hardening

Structure Hardening is a standards-based program that upgrades transmission wood pole structures with steel poles or other materials based on engineering design. Where applicable, manual transmission gang-operated air-break (GOAB) switches are upgraded to supervisory control and data acquisition (SCADA) enabled GOAB switches.

Prioritized transmission towers are upgraded to the current design standard. Cathodic protection (CP) measures include anode installations to mitigate active groundline corrosion on the steel towers. The anodes serve as sacrificial assets that corrode in place of structural steel, preventing loss of structure strength to corrosion.

On pole and tower structures, overhead transmission ground wires susceptible to damage or failure are upgraded to optical ground wire. Optical ground wires provide improved grounding and lightning protection as well as high-speed data transmission for system protection and control and communications.

On pole and tower structures, inspection-based deteriorated line insulators are upgraded with improved hardware. Upgraded insulators are composed primarily of glass and have a design improvement that includes a zinc sleeve to mitigate wear and ensure a better mechanical connection. The effect of this program is to reduce outage events and improve operation of the grid during extreme weather events.

Inspections are an enabling activity providing programmatic structure inspections of the overhead transmission system. Through inspections, structure health is evaluated by reviewing components that affect reliability including but not limited to right of way hazards, interference from foreign objects, load bearing member conditions, and insulator health. Programmatic ground inspections include the previously mentioned components and comply with the PSC's sound and bore requirements to ensure wood pole health. Tower drone inspections capture data for structures in difficult-to-access areas and/or instances where closer inspection is required. DEF is incorporating drone patrols into the inspections because drones have the unique ability to provide a close vantage point with multiple angles on structures that is unattainable through aerial or ground patrols with binoculars.

Table 11 outlines the investments and scale of the Transmission Structure Hardening program included in the SPP.

Table 11. Transmission Structure Hardening Program (3-Year Plan)

T1: Structure Hardening	2026	2027	2028
SPP Program Investment	$174.8M	$180.6M	$151.6M
Approx. No. of SPP Projects	229	118	74
Approx. No. of Poles	1936	1827	313
Approx. No. of Towers	76	74	147
Approx. No. of Switches	4	4	4
Approx. No. of Cathodic Protection	235	223	223
Approx. No. of Insulators	645	1368	3030
Approx. No. of Overhead Miles	37	42.2	107.6

Notes: Guidehouse's prioritization methodology may result in variations from other reported estimated line miles and unit counts for future years. Please see Appendix A for a description of Guidehouse's modeling methodology. The number of projects shown above represents the number of lines impacted.
Source: Guidehouse, Inc.

3.2.2 T2: Substation Flood Mitigation

Transmission Substation Flood Mitigation is a targeted program that evaluates flood mitigation measures for substations to protect against terrestrial flooding and storm surge conditions. Mitigation efforts may include mitigation measures such as containment curbing, elevating control equipment enclosure, elevating foundation, pumps, pits, walls, and total station rebuilds to increase elevation or other measures that mitigate water intrusion.

Table 12 outlines the investments and scale of the Substation Flood Mitigation program included in the SPP.

Table 12. Substation Flood Mitigation Program (3-Year Plan)

T2: Substation Flood Mitigation	2026	2027	2028
SPP Program Investment	$6.9M	$6.9M	$15.2M
Approx. No. of Substations	1	1	2

Notes: Guidehouse's prioritization methodology may result in variations from other reported estimated line miles and unit counts for future years. Please see Appendix A for a description of Guidehouse's modeling methodology. The number of projects shown above represents the number of substations impacted.
Source: Guidehouse, Inc.

3.2.3 T3: Substation Hardening

Substation Hardening is a standards-based program that will address two major components:

1. Upgrading oil breakers to state-of-the-art gas or vacuum breakers to mitigate the risk of catastrophic failure and extended outages during extreme weather events, and

2. Upgrading electromechanical relays to digital relays with advanced system protection functions and communications to enable DEF to respond and restore service more quickly from extreme weather events.

Table 13 outlines the investments and scale of the Transmission Substation Hardening program included in the SPP.

Table 13. Transmission Substation Hardening Program (3-Year Plan)

T3: Substation Hardening	2026	2027	2028
SPP Program Investment	$22.2M	$16.3M	$35.1M
Approx. No. of Substations	10	2	8

Notes: Guidehouse's prioritization methodology may result in variations from other reported estimated line miles and unit counts for future years. Please see Appendix A for a description of Guidehouse's modeling methodology. The number of projects shown above represents the number of substations impacted.

Source: Guidehouse, Inc.

3.3 Vegetation Management Programs

Vegetation Management is an essential, widely accepted baseline practice for storm hardening electric transmission and distribution systems against extreme weather events. Vegetation management (that is, tree pruning, cutting, danger and hazard tree removal, mowing, and chemical control of undesirable vegetation) is combined with other extreme weather event hardening measures as part of DEF's overall SPP for electric transmission and distribution line systems.

Extreme weather events, including high winds, heavy rain, and coastal surges, can cause trees to uproot and branches to break; this debris falls or flies into power lines, causing damage. For transmission systems, the primary cause of tree-related damage is trees outside the utility easement falling into conductors and creating damage. For distribution systems, which often cross heavily vegetated areas, the primary cause of power outages and asset damage is trees within or outside the utility easement. Fallen trees and branches also impede service restoration and emergency service response due to blocked roadways and streets.

3.3.1 VM1: Distribution Vegetation Management Program

The Distribution Vegetation Management program includes tree trimming, tree removals within easement, and associated activities on the distribution system. Also included are hazard tree removals on the distribution system outside of easement requiring landowner permission. Table 14 outlines the investments of the Distribution Vegetation Management program included in the SPP.

Table 14. Distribution Vegetation Management Program (3-Yr Plan)

VM1: Distribution Vegetation Management	2026	2027	2028
SPP Program Investment	$52.4M	$54.0M	$55.6M

Source: Guidehouse, Inc.

3.3.2 VM2: Transmission Vegetation Management Program

The Transmission Vegetation Management program includes tree pruning, tree removals within easement, and other vegetation management activities on the transmission right-of-way as well as danger tree removals outside of the easement to protect the transmission system. Table 15 outlines the investments of the Transmission Vegetation Management program included in the SPP.

Table 15. Transmission Vegetation Management Program (3-Yr Plan)

VM2: Transmission Vegetation Management	2026	2027	2028
SPP Program Investment	$25.7M	$23.9M	$27.3M

Source: Guidehouse, Inc.

Appendix A. Storm Protection Plan Methodology

This appendix provides the key approaches, methods, and assumptions Guidehouse used to develop its analysis for the DEF SPP investment plan.

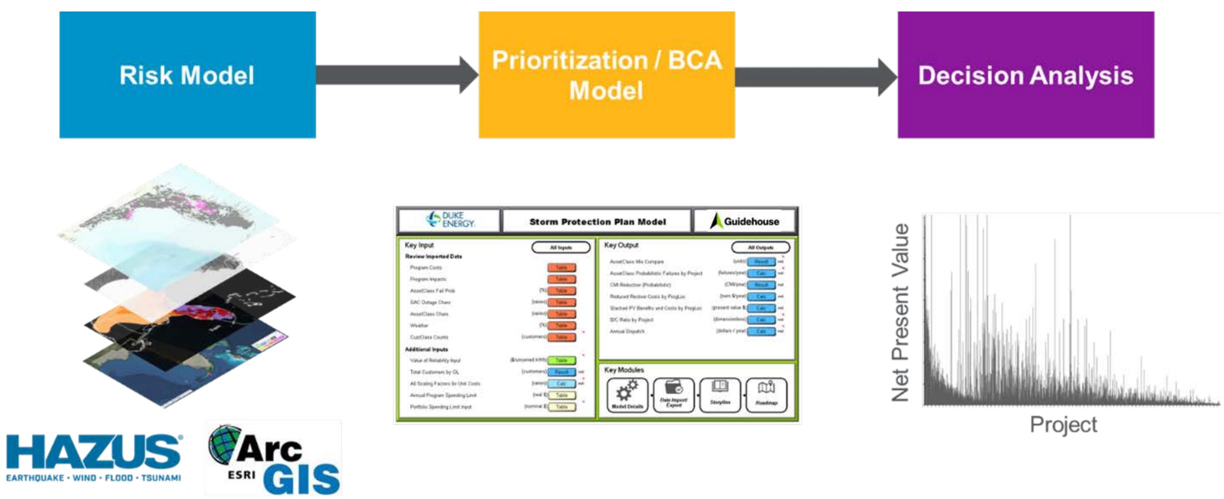
A.1 Overview of SPP Model

Similar to the SPP 2020 and SPP 2023 filings, Guidehouse applied a three-tiered modeling and analysis approach to assess the effectiveness of proposed storm hardening programs and to inform the implementation prioritization process. This approach allowed the project team to simulate the deployment of SPP programs at every applicable location and under a range of weather conditions within the DEF service area. The following subsections describe the modeling approach and each of the three tiers of analysis (risk model, benefit-cost analysis, and decision analysis) incorporated into the SPP model to support the evaluation and prioritization of individual DEF SPP programs.

A.1.1 High Level Modeling Approach

Figure A-1 illustrates the data flow of program information through the three tiers of modeling and analysis.

Figure A-1. High Level Overview of DEF SPP Modeling Solution



Source: Guidehouse, Inc.

The first stage, the risk model, imports layers of data from the DEF GIS related to assets (e.g., asset type, age, condition), the latitudinal and longitudinal position of assets, and their relational configuration—that is, the way in which the assets interconnect. The risk modeling stage also imports probabilistic weather models to assess the risk exposure to grid assets in varying extreme weather conditions (storm surge, flooding, high winds). Each simulated location in the territory reflected DEF's asset mix at that location and the probability of experiencing a range of weather conditions. The output of the risk model stage characterizes the degree and associated cost of damage that would occur under a defined weather scenario.

The benefit-cost analysis (BCA) model analyzes the benefits and costs of each relevant combination of program and location. The model uses outputs from the risk model and other information to simulate the expected present value of costs and benefits associated with each program.

The decision analysis is a high-level prioritization of projects according to the BCA model's outputs. This high-level prioritization does not account for real-world constraints such as the availability of work crews, site-specific engineering considerations, material availability and other prioritization factors.

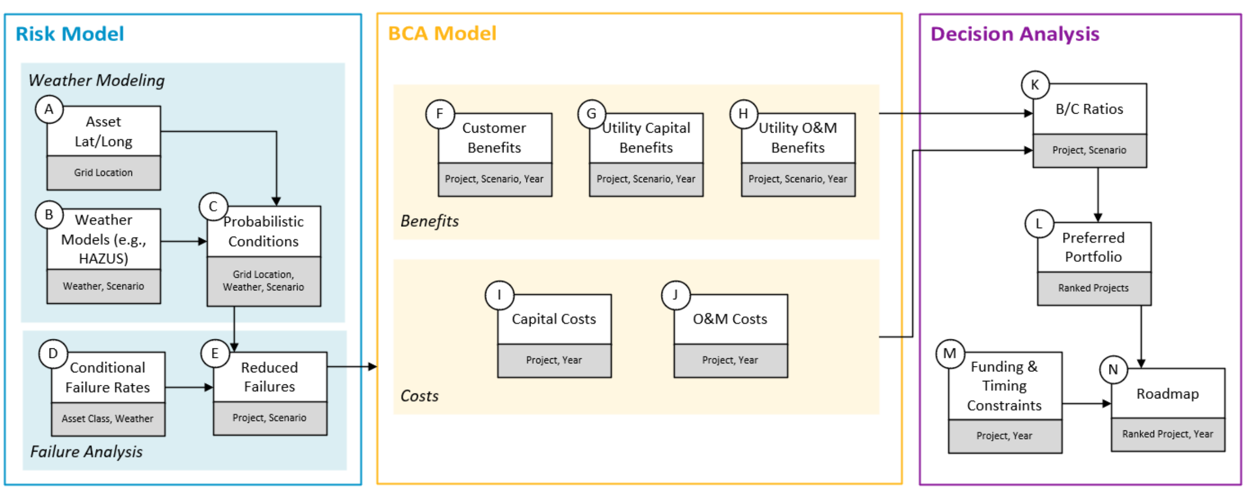
A.1.2 Detailed Modeling Approach

The SPP model characterizes individual transmission and distribution assets and storm hardening measures into broader categories, referred to as asset classes. Each program can then be defined based on the asset classes in place before and after the program is implemented. Programs are deployed at a locational level. Locations are defined as distribution circuits, transmission substations, and transmission circuits. A project is one program deployed at a single location. The scope of the project depends on the number of assets present at the location.

Binning individual assets into asset classes is a practical method for estimating the value of each project without having to carry each individual asset (e.g., an individual utility pole) through the risk, BCA, and decision analysis modules. This method maintains the locational quantities of asset classes, the locational probability of weather conditions, and the relationship between customers and assets in the GIS.

The approach leverages a synthetic modeling technique to develop the portfolio of projects that are best suited to increase grid hardening, improve overall service reliability and resiliency, and to develop a high-level prioritized investment plan for project implementation. This solution is illustrated in Figure A2, split by modules for risk, BCA, and decision analysis.

Figure A-2. Detailed Modeling Approach Flow Diagram



Source: Guidehouse, Inc.

The following sections summarize the concepts, logic, inputs, and outputs associated with each element of the flowchart in Figure A-2.

Risk Model

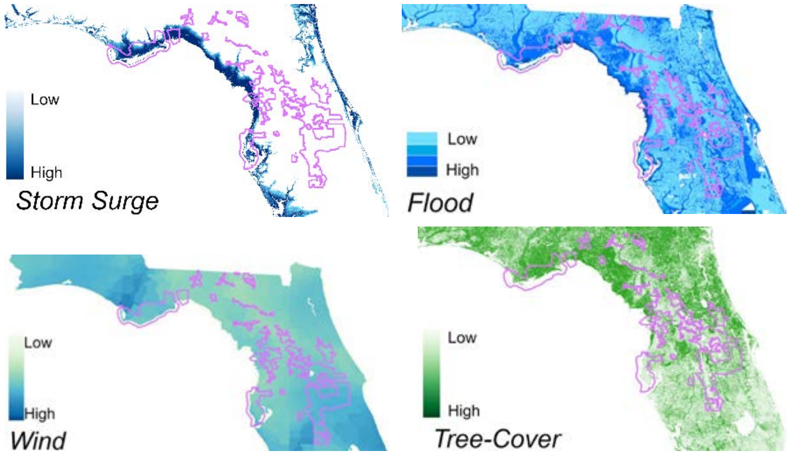
The primary purpose of the risk model is to estimate the expected frequency of asset failures under various weather conditions before and after the programs are implemented. The risk model is a bottom-up simulation of asset performance, calibrated to observed customer impacts and restoration costs in DEF territory. Components A through E from the risk model section in Figure A-2 are summarized as follows.

A	**Asset Lat/Long**	• Latitude and longitude of the asset (points), or latitude and longitude of vertices (line)
B	**Weather Models**	• Federal Emergency Management Agency (FEMA) and National Oceanic and Atmospheric Administration (NOAA) historic data and probability simulations of weather conditions (flood, storm surge, and wind speed) • FEMA HAZUS[11] model used for wind speed • FEMA SLOSH[12] model used for storm surge • NOAA and FEMA flood risk layers
C	**Probabilistic Conditions**	• Annual probability of occurrence for a given weather condition and location combination • Conditions are specific to each location
D	**Conditional Failure Rates**	• Probability of asset class failure when exposed to a given weather condition • Conditional failure rates applied to each location, thus picking up the location-specific probabilistic conditions in C
E	**Reduced Failures**	• Reduction in probability of asset class failure when a measure/program is applied • Dependent on the probabilistic conditions (weather) in C • Reduced outage time as well as equipment failure counts allow the value to reducing either or both to be incorporated into the BCA

Guidehouse simulated the weather conditions in the model through detailed environmental GIS data streams, as illustrated in Figure A-3.

[11] FEMA's Hazards US – Multi-Hazard (HAZUS) Model; https://msc.fema.gov/portal/resources/download
[12] FEMA's The Sea, Lake and Overland Surges from Hurricanes (SLOSH) Model; https://slosh.nws.noaa.gov/slosh/

Figure A-3. Illustrative Environmental GIS Layers

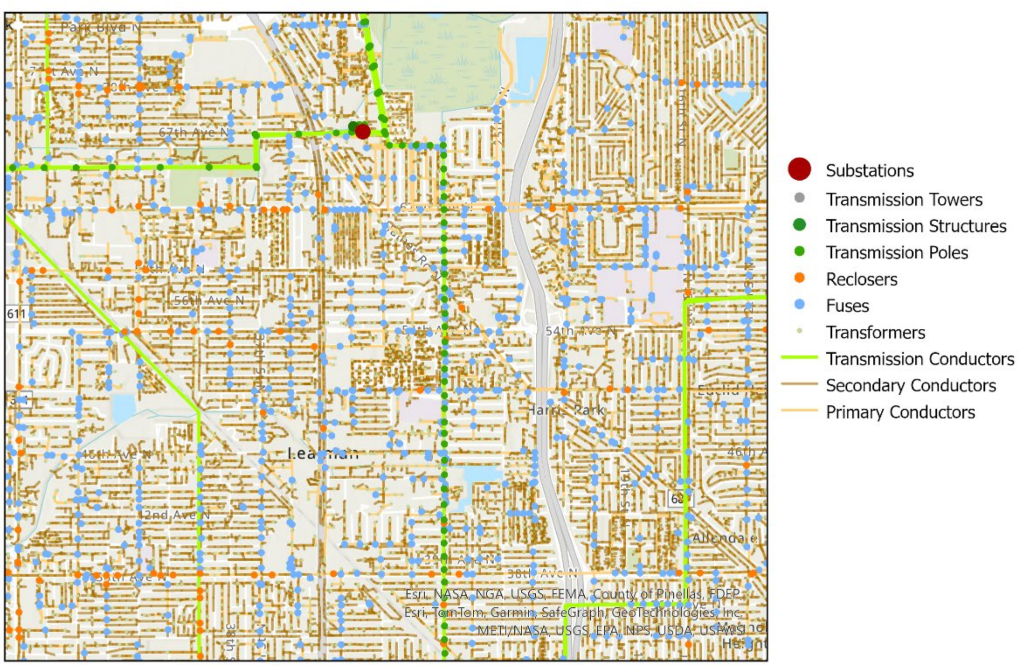


Source: HAZUS-MH, SLOSH, USGS, NOAA, Ventyx Energy Velocity

Guidehouse synthesized various data streams from the US Geological Survey (USGS), FEMA, and NOAA, including HAZUS simulations on storm surge and wind speeds, tree cover, and flood plains (Figure A-3), into a GIS. When formatted and regularized, the project team used these layers to generate probabilistic future conditions in DEF territory. Each combination of an asset location and weather scenario has an expected annual frequency of flooding, storm surge, and high wind conditions.

The impact of a program can then be estimated given the location-specific weather condition modeling and the mix of assets deployed. The asset mix is determined from DEF GIS and asset management system data, as illustrated in Figure A-4.

Figure A-4. Partial Illustration of GIS Asset Data

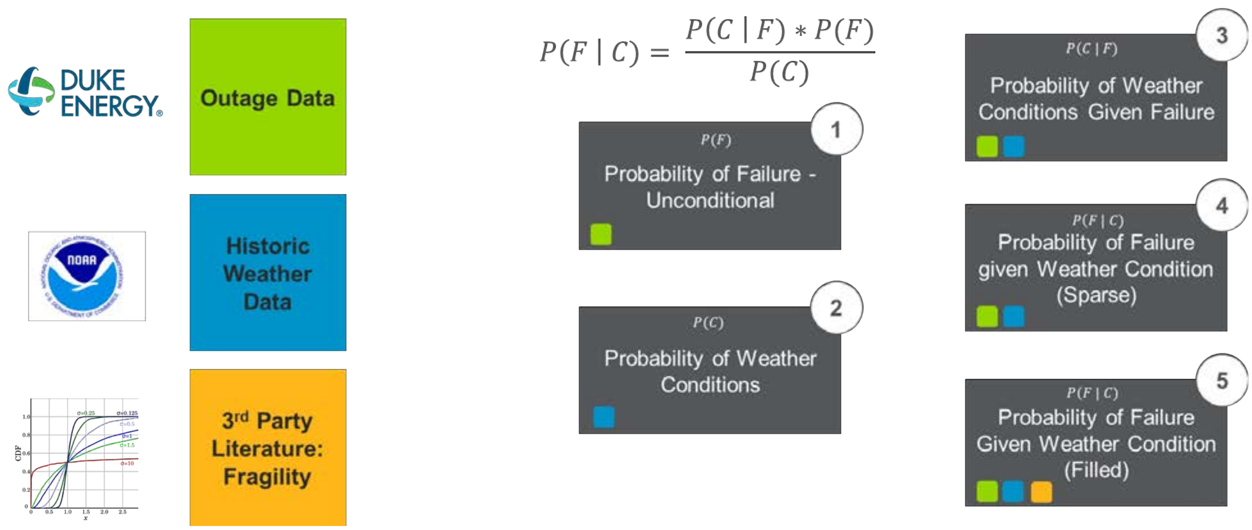


Source: Guidehouse, Inc., Duke Energy Florida

Guidehouse performed conditional failure analysis using historic DEF outage data, DEF asset data, and NOAA weather data. Each outage event was matched to historic data from the nearest weather station to the outage and the time of the outage. Figure A-5 illustrates the process for developing the probability of failure given weather conditions.

To forecast the value of SPP programs, Guidehouse overlays location-specific risk factors with the mix of grid assets at each location (e.g., circuit). This approach requires the use of a combination of DEF asset data, historic DEF outage data, risk data, and National Oceanic and Atmospheric Administration (NOAA) weather station data. By quantifying the risk frequencies at each location, the mix of asset classes at each location, and the probability of failure of each asset class given those conditions, the SPP model can estimate the probabilistic failures (and therefore CMI) before and after the storm hardening programs are implemented. An overview of the conditional probability formula and process for developing the probability of failure is illustrated in Figure A-5 below.

Figure A-5. Conditional Failure Analysis Approach



Source: Guidehouse, Inc.

The five steps used for the conditional failure analysis approach to derive conditional failure rates by asset class are described below:

1. **Probability of Failure: P(F)**

   The probability of failure is calculated based on asset classes versus calculating probabilities for each individual asset (e.g., an individual utility pole). The SPP model bins the individual transmission and distribution assets into broader categories of asset classes defined by the specifications of the storm hardening measures. Binning individual assets into asset classes is a practical method for estimating the value of each project without having to carry each individual asset through the entire analysis. The total number of outages for each asset class is then counted and divided by the total number of assets in each class, adjusted for the average event time based on the 22-hour data from NOAA weather stations.

2. **Probability of Weather Condition: P(C)**

The frequency of each risk/weather condition is recorded for each asset location. The risks being assessed for the model are high winds from hurricanes, storm surge, and terrestrial flooding using data from NOAA and FEMA. The risks and their data sources are listed in Table A-1.

- **High winds** – windspeeds per storm category, the frequency of the storm categories, and the probability of damage for categorical windspeeds are generated using FEMA's HAZUS model for hurricanes and tropical storms.[13] The HAZUS hurricane model incorporates hurricane data over the historical record and data is generated at the census tract level.
- **Storm surge** – storm surge data is provided by NOAA's Sea, Lake and Overland Surges from Hurricanes (SLOSH) model.[14] The SLOSH model estimates the storm surge heights from historical, hypothetical, or predicted hurricanes. For the SPP project, the maximum potential storm surge heights are selected for each storm category. Guidehouse used a minimum of 4 ft storm surge at each location to calculate damage.
- **Terrestrial flooding** – the frequency and probability of flood events are generated from FEMA's Digital Flood Insurance Rate Maps (DFIRM).[15] DFIRM provides GIS based datasets that delineate the areas according to the probability of 100-year (1%), 500-year (0.2%), and minimal flood events. Guidehouse used a minimum of 4 ft at each location to calculate damage.

Table A-1. Risk Descriptions Summary

Risk	Data Description	Data Source
High Winds	Wind speeds for the following storm categories/intensities: ▪ Tropical Storms ▪ Category 1 ▪ Category 2 ▪ Category 3 ▪ Category 4 ▪ Category 5	FEMA HAZUS Hurricane model generated windspeeds at the census tract level
Storm Surge	Maximum potential storm surge height given Category 1, Category 2, Category 3, Category 4, Category 5 storm	NOAA Sea, Lake and Overland Surges from Hurricanes (SLOSH)
Terrestrial Flooding	1-percent-annual-chance flood event (100 year), the 0.2-percent-annual-chance flood event (500 year), and areas of minimal flood risk	FEMA Digital Flood Insurance Rate Maps (DFIRM)

[13] FEMA Hazards US – Multi-Hazard (HAZUS) Model; FEMA Flood Map Service Center | Hazus

[14] NOAA | The Sea, Lake and Overland Surges from Hurricanes (SLOSH) Model; Sea, Lake, and Overland Surges from Hurricanes (SLOSH) (noaa.gov)

[15] FEMA Digital Flood Insurance Rate Maps (DFIRM); National Flood Hazard Layer | FEMA.gov

3. **Probability of Weather Conditions Given Failure: P(C|F)**

   Using data from local weather stations, Guidehouse matched the conditions observed at each location to each outage event based on the location and time of the outage. This gives the best possible estimate of the existing weather conditions at the time of each outage in the system.

4. **Probability of Failure Given Weather Condition (Sparse): P(F|C)**

   Using conditional probability statistics, we calculate the probability of failure (step 1) given the probability of the weather condition (step 2) and the conditional probability of failure given an observed condition (step 3). Each combination of an asset location and weather scenario has an expected annual frequency of high wind, storm surge, and flooding conditions. The resulting empirical probability of failure is sparse since every condition has not been observed in the outage data for each asset class and location.

5. **Probability of Failure Given Weather Condition (Filled): P(F|C)**

   To fill in any gaps (conditions not observed for a location and asset class combination) using fragility analysis literature.[16]

Using the approach described above, Guidehouse defined the risk associated with each location on DEF transmission and distribution systems. Using the characteristics and locations of each asset on the system, Guidehouse quantified the likelihood of failure given that risk. Successful hardening approaches are those that reduce the likelihood of failure. The asset upgrades and hardening approaches were defined for each program to calculate the benefits of each SPP program implemented at each grid location.

BCA Model

The BCA model is a tool used to calculate annual cash flows of each value stream relevant to the BCA. The model aggregates information and data from multiple sources and calculates results under different weather scenarios. Guidehouse assessed costs and benefits over a 30-year period for distribution programs and a 40-year period for transmission programs.

One of the core benefits assessed in the BCA model is customer outage benefits. This benefit is calculated based on the customer value of electricity (in terms of $/unserved kWh). The customer value of electricity varies based on the length of the outage and customer class.[17] The other benefits include utility capital and operations and maintenance (O&M) benefits associated with a hardened grid that experiences less asset failures relative to the conditions before the program implementation. The project team estimated the costs of program implementation on a location level based on the number of units deployed. The unit costs were developed by DEF and account for labor, material, indirect costs, staging and logistics, inflation, and contingency.

Referring back to Figure A-2, components F through J from the BCA model section are summarized below.

[16] Panteli, Mathaios, et al. "Power system resilience to extreme weather: fragility modeling, probabilistic impact assessment, and adaptation measures." IEEE Transactions on Power Systems 32.5 (2016): 3747-3757.; Guikema, Seth, and Roshanak Nateghi. "Modeling power outage risk from natural hazards." Oxford Research Encyclopedia of Natural Hazard Science. 2018.

[17] The Interruption Cost Estimate (ICE) Calculator is an electric reliability planning tool developed by Lawrence Berkeley National Laboratory and Nexant, Inc. Available at https://icecalculator.com/home.

F	**Customer Benefits**	• Quantify reduction in outage time and associated downstream load by customer class. • Value of avoided outages is based on the value of an unserved kWh, which depends on the type of customer and the length of the outage. • The ICE calculator typically applies to outage times less than or equal to 16 hours. For outage times greater than 16 hours, Guidehouse applied the 16-hour outage values as a simplifying assumption.
G	**Utility Capital Benefits**	• Calculated based on the reduced asset failures and the capital cost to replace those assets. • Value of deferring future capital replacement of existing assets by replacing them before the end of their expected useful lifetime with hardened equipment.
H	**Utility O&M Benefits**	• Calculated based on the reduction in O&M restoration costs associated with the reduction in asset failures.
I	**Capital Costs**	• The capital costs required to deploy the programs.
J	**O&M Costs**	• The O&M costs required to deploy the programs.

Decision Analysis

In the decision analysis portion of the model, the project-level BCA results were used to determine the prioritization and deployment plan for the programs. Thus, any prioritization shown in this report is driven only by the project BCA results; they do not include many crucial factors for project implementation. Guidehouse's analysis in this report does not consider other important factors that should be considered in program implementation that were outside the scope of this study, such as technology and regulatory risk, broader community benefits, customer inconvenience, viewshed, customer engagement, and local engineering expertise. This may mean that the actual implementation may differ from the BCA-based prioritization presented in this report.

Components K through N from the decision analysis section of Figure A-2 are summarized below.

K	**B/C Ratio**	• The costs and benefits of each project and scenario over the analysis period are converted into present values using discount rates for each cost test. Net present values and benefit-cost (B/C) ratios are then calculated for each project and scenario. • The B/C ratios are based on a theoretical deployment of the solution starting in the first year of the analysis period.
L	**Preferred Portfolio**	• Using the B/C ratios, the project team ranked each project from most preferred to least preferred. • Interactive effects were accounted for by counting the benefits of a program after other interacting programs' impact (e.g., self-optimizing grid impacts were estimated after feeder hardening). This ensured that program benefits were not double counted.

M	**Funding & Timing Constraints**	• Guidehouse applied program- and portfolio-level funding constraints, which DEF provided. These represent practical limits on program implementation.
N	**Roadmap**	• Projects were deployed algorithmically according to the ranking in step L and the constraints in step M. Annual program deployment analysis was guided by practical limitations on achievable implementation provided by the DEF project team and subject matter experts.

Appendix B. Weather Scenario Modeling

Guidehouse's model uses a detailed GIS representation of DEF territories, providing weather conditions specific to the exact latitude and longitude of an asset. This area-specific GIS representation allows for simulated weather conditions and exposure probabilities to be generated for each specific asset. The project team developed three weather scenarios that categorize the range of storm occurrence from average frequencies to high frequencies designated as the following:

- **Scenario 1** – Normal Storm Frequency (Base Case)
- **Scenario 2** – Above Average Storm Likelihood
- **Scenario 3** – High Storm Likelihood

Each weather scenario is designed as a discrete, consistent, representative outlook on storm frequency and intensity applied at each asset location across the DEF service area throughout the planning horizon.

Hurricane activity was analyzed for Florida from 1851-2023 using NOAA's Atlantic Basin hurricane database (HURDAT). This database is the most comprehensive hurricane dataset available for state specific storm occurrence. The data provides the maximum 1-min average windspeed associated with the tropical cyclone at an elevation of 10m with an unobstructed exposure[18]. The storms were then categorized based on those data according to the Saffir-Simpson Scale shown in Table B-1.

Table B-1. Saffir-Simpson Scale

Category	Wind Speed (mph)
Blue Sky	0 – 40
Tropical Storm	40 – 74
Category 1	74 – 96
Category 2	96 – 111
Category 3	111 - 130
Category 4	130 - 157
Category 5	157+

[18] National Hurricane Center: https://www.nhc.noaa.gov/data/; Landsea, C. W. and J. L. Franklin, 2013: Atlantic Hurricane Database Uncertainty and Presentation of a New Database Format. Mon. Wea. Rev., 141, 3576-3592

B.1 Scenario 1 – Normal Storm Frequency

The normal storm frequency scenario is defined by average conditions experienced in DEF territory: the frequency is the total number of events over all years, divided by the number of years. This is the annual average likelihood of each storm category to strike West Central Florida based on 1851-2023 NOAA data. It is common to refer to a hurricane by the highest point on the Saffir-Simpson scale that it achieves, although the actual windspeeds at any given location affected by the hurricane will tend to be lower. As hurricanes achieve landfall and move inland, windspeeds typically decrease. These factors are accounted for in the detailed locational probabilities in the Guidehouse model.

The base case represents the typical storm likelihood over the long run, as informed by the HURDAT dataset. This is the long-run annual average chance for each storm category to strike west central Florida, as measured by NOAA from 1851-2023. Note that these frequencies will not sum to 1, since there can be more than one storm event per year. Frequency (F) for each storm severity condition (S) is calculated as follows:

$$F_{S,22} = \frac{\sum_{i=1}^{T}(n_{S,22})}{T_{years}}$$

The frequency F is determined by number of 22 hour event windows[19] (n) that have occurred of a given storm severity S over the full 1851-2023 time period T, given an event duration. Because tropical cyclones have variable durations, and damage is a function of the duration of exposure to high winds and flooding, we calculate the number of events based on the average event window duration observed for tropical cyclones of 22 hours.

Table 18 illustrates the frequency of the windspeed conditions for each scenario described below. Importantly, this table shows number of 22 hour windows per year in which the given condition was observed, averaged over all of DEF's locations (distribution circuits, transmission networks, substations). The number of storms in an average Florida hurricane season will tend to be higher than this, since the majority of DEF locations are inland. The frequencies are rounded in the table for readability. Finally, because each location is a different size, this will not be fully representative of the system as a whole. It is included here in order to demonstrate the change in frequency observed between scenarios without including the full list of locations in a single table.

B.2 Scenario 2 – Above Average Storm Frequency

Above average storm frequency is defined by increasing the annual likelihood of storm strike by 10%. That is to say, the overall likelihood of storms increases by a factor of 0.1. Note that $F_{Blue\ Sky,22}$ is also reduced slightly, but the effect of the scenario increase is negligible on the likelihood of getting a blue-sky day in the year.

[19] NOAA weather data suggests the long-run historic average storm duration is 22 hours. While there is some evidence that more recent hurricanes have longer durations, Guidehouse held this event window constant for this forecast in all scenarios.

B.3 Scenario 3 – High Storm Frequency

The increased storm frequency scenario is defined by increasing the annual likelihood of a storm event by 25% relative to the base scenario. This results in the increased average frequencies in Table B-2 .

Table B-2. Average Condition Frequency by Scenario

	Tropical Storm	Category 1	Category 2	Category 3	Category 4	Category 5
Scenario 1 (Normal)	1.1385	0.0831	0.0165	0.0056	0.0014	0.0002
Scenario 2 (Above Average)	1.2524	0.0914	0.0182	0.0062	0.0016	0.0002
Scenario 3 (High Storm)	1.423152	0.1039	0.0207	0.0070	0.0018	0.0003

While the table illustrates the methodology applied across the entire state, in the GIS model, weather conditions were simulated at a detailed location level (latitude/longitude) before being applied to the BCA.

The frequencies above are relative to observed wind speed. The maximum windspeed present during a given 22-hour window was then used to assign those 22 hours to a severity class.

By summing the hours in each severity class and annualizing, we obtain the frequencies $F_{S,22}$ of any given 22-hour event over the year belonging to severity class S. The frequency of blue sky events for each scenario is then given by survival equation below.

$$F_{no\ S,year} = \left(T - F_{S,22}\right)$$

Appendix C. SPP Programs Descriptions for Modeling

This section describes the transmission, distribution and vegetation management programs evaluated in the SPP 2026 model. Each program description includes the following elements:

- **Program Description:** Programs descriptions provide a general overview of the extreme weather hardening actions and associated assets considered for model evaluation.
- **Extreme Weather Benefits:** Extreme weather benefits provide an overview of how each program provides benefits for outage prevention, system hardening, and outage reduction.
- **Program Elements:** Program elements are the specific modeled assets added to or upgraded within each program that will provide severe weather storm hardening benefits.

Guidehouse developed these descriptions to facilitate the modeling and analysis activities. More complete program descriptions are provided by DEF.

C.1 D1: Feeder Hardening Program

C.1.1 Feeder Hardening (Overhead)

Program Description	The Feeder Hardening program is a standards-based program that systematically upgrades the feeder backbone to meet extreme wind loading requirements defined in the National Electric Safety Code (NESC) Rule 250C. This upgrade enables the feeder backbone to better withstand extreme weather events. Work includes strengthening structures to higher class wood or concrete, updating basic insulation level to current standards, updating the conductor to current standards, relocating difficult-to-access facilities, undergrounding sections of the feeder to mitigate clearance encroachments, avian and animal mitigation and protection and replacing oil-filled equipment. Feeder backbone line poles also receive preventive maintenance and undergo inspection to identify poles showing signs of decay or identify those falling below minimum strength requirements.
Extreme Weather Benefit	**Outage prevention**. Upgrading assets lowers the risk of in-service failure during extreme weather conditions. **System hardening.** Replacing or upgrading infrastructure to make it less susceptible to extreme weather and wind damage.
Program Elements	Rebuilds existing primary backbone non-hardened circuit assets with new upgraded construction. This project type includes upgrading assets to current standards: poles, overhead conductors, reclosers, and overhead transformers.

C.1.2 Feeder Wood Pole Replacement and Treatment

Program Description	The Feeder Wood Pole Inspection and Treatment enabling activities are an inspection and preventive maintenance activity to determine if wood poles are showing signs of decay or if they fall below the minimum strength requirements. Poles with decay determined to be State 5 (Priority 1 - Replace immediately) or State 4 (Priority 2 - Replace as soon as practicable) are scheduled for replacement. Poles with minor deterioration (State 3) or deemed still serviceable (States 3, 2) may receive treatment to extend life of the pole.
Extreme Weather Benefit	**Outage prevention.** Identifying decayed poles more vulnerable to storm or severe weather damage and targeting them for strengthening measures, replacement, or treatment. Extreme weather benefits are not modeled for enabling activities.
Program Elements	Identifies decayed poles to be replaced or poles to be treated to extend the life of the pole.

C.2 D2: Lateral Hardening Program

C.2.1 Lateral Hardening (Underground)

Program Description	Lateral Hardening Undergrounding standards-based activity focuses on branch lines that historically experience the most outage events, contain significantly aged assets, are susceptible to damage from vegetation, and/or often have facilities that are inaccessible to trucks. These branch lines will be replaced with a modern, updated, and standard underground design of today.
Extreme Weather Benefit	**Outage prevention.** Reducing likelihood of outages caused by vegetation impacts during extreme weather. **System hardening.** Replacing or upgrading infrastructure to make it less susceptible to extreme weather and wind damage.
Program Elements	Replaces existing primary overhead branch line segments with new relocated underground line segments. All overhead assets are removed and replaced with underground distribution transformers, underground primary and secondary conductors, and a new overhead distribution fused riser pole is installed.

C.2.2 Lateral Hardening (Overhead)

Program Description	The Lateral Hardening program is a standards-based program that systematically upgrades the overhead lateral lines to meet extreme wind loading requirements defined in the National Electric Safety Code (NESC) Rule 250C. This upgrade enables the lateral lines to better withstand extreme weather events. Work includes strengthening structures, updating basic insulation level to current standards, updating the conductor to current standards, relocating difficult-to-access facilities, and replacing oil-filled equipment. Lateral pole lines also receive preventive maintenance and undergo inspection to identify poles showing signs of decay or identify those falling below minimum strength requirements.
Extreme Weather Benefit	**Outage prevention.** Reducing outage frequency by moving the line to the front of the premise from the back when applicable, thus avoiding exposure to vegetation in high winds. This activity reduces outage duration by making the line more accessible to crews. **System hardening.** Replacing or upgrading infrastructure to make it less susceptible to extreme weather and wind damage.
Program Elements	Upgrades existing non-hardened primary branch lateral distribution overhead primary circuits with extreme wind load standard construction and other associated asset upgrades. This includes upgrading assets: poles - Class 2 or greater, overhead primary conductor – 1/0 or greater, overhead service – triplex, reclosers – self-healing, fuses – trip savers, and overhead transformers – conventional.

C.2.3 Lateral Wood Pole Inspection and Treatment

Program Description	The Lateral Wood Pole Inspection and Treatment enabling activity is an inspection and preventive maintenance activity to determine if wood poles are showing signs of decay or fall below the minimum strength requirements. Poles with reduced strength determined to be State 5 (Priority 1 - Replace immediately) or State 4 (Priority 2 - Replace as soon as practicable) are identified for replacement. Poles with minor deterioration (State 3) or deemed still serviceable (States 3, 2) may receive treatment to extend life of the pole.
Extreme Weather Benefit	**Outage prevention.** Identifying poles more vulnerable to storm or severe weather damage and targets them for strengthening/uplift measures, replacement, or treatment. Extreme weather benefits are not modeled for enabling activities.
Program Elements	Identifies decayed poles to be replaced or poles to be treated to extend the life of the pole.

C.3 D3: Self-Optimizing Grid Program

Program Description	The SOG program consists of three major components: capacity, connectivity, and automation and intelligence. The Self-Optimizing Grid standards-based program redesigns portions of the distribution system into a dynamic smart-thinking, self-healing network. The grid will have the ability to automatically reroute power around trouble areas, like a tree on a power line, to quickly restore power to the maximum number of customers and rapidly dispatch line crews directly to the source of the outage. The benefit from completing this program is fewer customers affected by long duration outages as a result of extreme weather events.
Extreme Weather Benefit	**Outage reduction.** Adding the ability to reroute power during severe weather events reduces outage duration, frequency, and number of customers affected.
Program Elements	The Segmentation Criteria is: • Average 400 customers in each line segment, or • Average 3 Miles of overhead exposure in each line segment, or • Average 2MW peak load in each line segment

C.4 D4: Underground Flood Mitigation Program

Program Description	Within flood prone areas, Underground Flood Mitigation is a targeted program which will harden existing underground lines and equipment to withstand a storm surge through the use of the applicable Duke Energy Florida storm surge standards. The primary purpose of this hardening activity is to minimize the damage caused by a storm surge to the equipment and thus expedite the restoration after the storm surge has receded.
Extreme Weather Benefit	**Outage prevention.** Limiting equipment failures due to flood intrusion. **System hardening.** Replacing or upgrading infrastructure to make it less susceptible to extreme weather and water damage.
Program Elements	Upgrades existing non-submersible underground distribution assets with new submersible underground assets and applies other flood and surge proofing measures such as sealing ducts and equipment enclosures.

C.5 T1: Structure Hardening Program

C.5.1 GOAB Automation

Program Description	Where applicable, the program targets upgrading manual transmission gang-operated air-break (GOAB) switches with supervisory control and data acquisition (SCADA)-enabled GOAB switches.
Extreme Weather Benefit	**Outage reduction.** Sensing voltage and current and enabling SCADA operators or master system software to perform remote switching. This capability eliminates the need to operate the devices locally from the control cabinet, as well as automatic sectionalizing operations. Compared to manual switching, remote switching can significantly reduce outage durations times.
Program Elements	Upgrades existing manual GOAB switches with SCADA-enabled GOAB switches.

C.5.2 Wood Pole Replacement

Program Description	The Wood Pole standards-based activity prioritizes replacing transmission wood pole structures with steel poles or other materials based on engineering design.
Extreme Weather Benefit	**Outage prevention.** Providing for the acceleration of the replacement of wood poles, which lowers the risk of pole failure-related outages. **System hardening.** Replacing or upgrading infrastructure to make it less susceptible to extreme weather and wind damage.
Program Elements	On transmission lines, replaces existing prioritized transmission wood pole structures with new steel poles or other materials

C.5.3 Line Insulator Upgrades

Program Description	Brings an accelerated pro-active upgrade of deteriorated line insulators to decrease outage events and improve operation of the grid during extreme weather events. Line Insulator upgrades will be prioritized based on inspection data and enhanced weather modeling
Extreme Weather Benefit	**Outage prevention.** Proactively evaluating structure health lowers the risk of asset failures during extreme weather conditions.
Program Elements	Upgrades insulators and critical hardware. Upgraded insulators are primarily glass. The glass bell has a more uniform matrix than porcelain or polymer, with a design change that includes a zinc sleeve to mitigate wear for a better mechanical connection.

C.5.4 Structure Inspections

Program Description	Inspections are an enabling activity providing programmatic structure inspections of the overhead transmission system. Through inspections, structure health is evaluated by reviewing components that affect reliability including but not limited to right of way hazards, interference from foreign objects, load bearing member conditions, and insulator health. Programmatic ground inspections include the previously mentioned components and comply with the sound and bore requirements of the PSC to ensure wood pole health.
Extreme Weather Benefit	**Outage prevention.** Proactively evaluating structure health lowers the risk of in-service failures during extreme weather conditions. Extreme weather benefits are not modeled for enabling programs.
Program Elements	Inspects poles and towers, insulators, guying, anchoring, and foundations; identifies defective towers and poles for replacement.

C.5.5 Tower Upgrades

Program Description	The Tower Upgrades standards-based activity upgrades prioritized transmission towers to the current standard design.
Extreme Weather Benefit	**Outage prevention.** Upgrading prioritized steel, wood/steel towers with a new CP steel tower lowers the risk of in-service failure during extreme weather conditions. **System hardening.** Replacing or upgrading infrastructure to make it less susceptible to extreme weather and wind damage.
Program Elements	Upgrades existing prioritized transmission towers with a new steel transmission tower or steel/concrete structure.

C.5.6 Tower Cathodic Protection

Program Description	The Cathodic protection (CP) measures include anode installations to mitigate active groundline corrosion on steel towers. The anodes serve as sacrificial assets that corrode in place of structural steel, preventing loss of structure strength to corrosion.
Extreme Weather Benefit	**Outage prevention.** Installing CP on prioritized steel towers to lower the risk of in-service failure during extreme weather conditions.
Program Elements	Installs passive CP systems comprised of anodes on each leg of steel towers for ongoing corrosion control.

C.5.7 Tower Drone Inspections

Program Description	The Tower Drone enabling activity uses drones to capture inspection data for structures in difficult to access areas and/ or instances where closer inspection is required. DEF is incorporating drone patrols into the inspections because drones have the unique ability to provide a close vantage point with multiple angles on structures that is unattainable through aerial or ground patrols with binoculars.
Extreme Weather Benefit	**Outage prevention.** Proactively evaluating towers for deterioration lowers the risk of in-service failure during extreme weather conditions. Extreme weather benefits are not modeled for enabling programs.
Program Elements	Conducts drone inspections on targeted lattice tower lines to identify otherwise difficult to see structure, hardware, or insulation vulnerabilities through high resolution imagery.

C.5.8 Overhead Ground Wires

Program Description	The Overhead Ground Wires standards-based activity targets replacement of transmission overhead ground wire susceptible to damage or failure with optical ground wire (OPGW). OPGW improves grounding and lightning protection and provides high speed transmission of data for system protection and control and communications.
Extreme Weather Benefit	**Outage prevention.** Lowering the risk of overhead ground wire in-service failure during extreme weather conditions due to lightning damage or mechanical failure. **System hardening.** Providing redundant sources of fiber optic communications for system protection and control and supports faster identification of trouble spots on the transmission system and enables faster restoration following line faults.
Program Elements	Upgrades existing overhead ground wire with overhead OPGW.

C.6 T2: Substation Flood Mitigation Program

Program Description	The Substation Flood Mitigation targeted program evaluates substations for the application of flood mitigation measures. Mitigation efforts may include new mitigation measures such as containment curbing, elevating equipment, elevating control equipment enclosure, elevating elevated foundation, pumps, pits, walls, and total station rebuilds to increase elevation or other measures that mitigate water intrusion.
Extreme Weather Benefit	**Outage prevention.** Reducing risk of prolonged outages caused by flooding. **System hardening.** Replacing or upgrading infrastructure to make it less susceptible to water intrusion and extreme weather conditions.
Program Elements	Removes existing non-flood mitigated substations and upgrades with flood mitigation substations (flood mitigation applied to existing non-flood mitigated substations).

C.7 T3: Substation Hardening Program

Program Description	Substation Hardening is a standards-based program that will address two major components. 1) Upgrading oil breakers to state-of-the-art gas or vacuum breakers to mitigate the risk of catastrophic failure and extended outages during extreme weather events. 2) Upgrading electromechanical relays to digital relays with advanced system protection functions and communications to enable Duke Energy Florida to respond and restore service more quickly from extreme weather events.
Extreme Weather Benefit	**Outage reduction.** Reducing risk of in-service failures of breakers and relays during extreme weather conditions. Enabling more rapid identification and location of faults on transmission lines. **Outage prevention.** Supporting prompt and accurate diagnosis of grid events and operations to prevent recurrence.
Program Elements	Removes oil-filled substation breakers and electromechanical relays and upgrades with programmable electronic relays and gas-filled substation breakers.

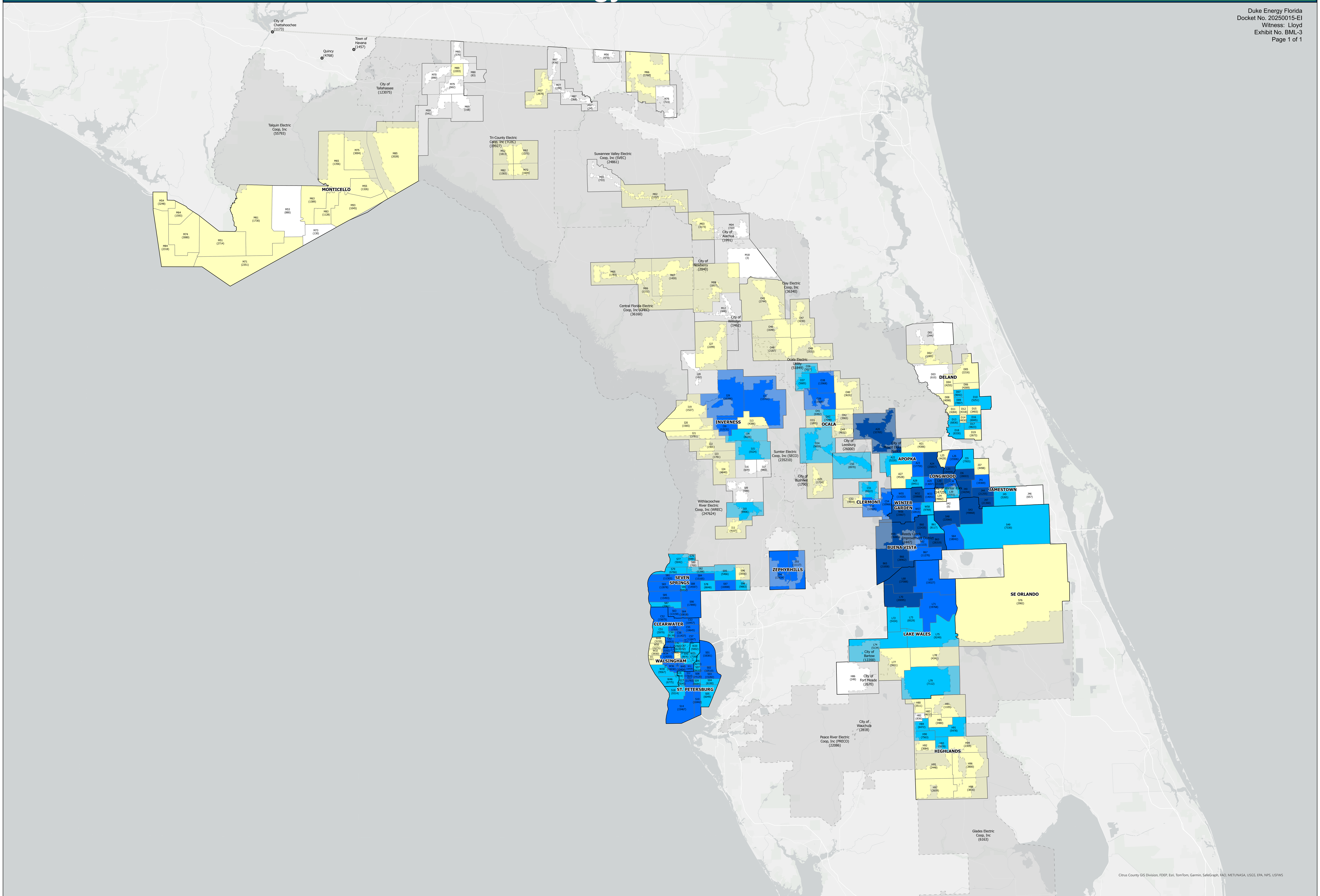
C.8 VM1: Distribution VM Program

Program Description	The Distribution Vegetation Management enabling program includes tree trimming, tree removals within easement, and associated activities on the distribution system. Also included are danger and hazard tree removals on the distribution system outside of easement requiring landowner permission.
Extreme Weather Benefit	**Outage prevention.** Removal of vegetation likely to interfere with system operation during extreme weather reduces the likelihood of outages.
Program Elements	Applies cycle trimming, removal, demand trimming, herbicide, and hazard tree removal.

C.9 VM2: Transmission VM Program

Program Description	The Transmission Vegetation Management program includes tree pruning, tree removals within easement, and other vegetation management activities on the transmission right-of-way as well as danger tree removals outside of the easement to protect the transmission system.
Extreme Weather Benefit	**Outage prevention.** Removal of vegetation likely to interfere with system operation during extreme weather reduces the likelihood of outages.
Program Elements	Applies condition-based vegetation management that includes inspections, pruning, removal, mowing, herbicide, and danger tree removal.

Duke Energy Customer Counts



Legend:

Distribution Customers
- 0 - 1000
- 1001 - 5000
- 5001 - 10000
- 10001 - 20000
- 20001 - 50000

- Distribution Op Center
- Transmission Level Customers
- Transmission Level Customers

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

IN RE: REVIEW OF 2026-2035 STORM PROTECTION PLAN, PURSUANT TO RULE 25-6.030, F.A.C., DUKE ENERGY FLORIDA, LLC.

DOCKET NO. 20250015-EI

DIRECT TESTIMONY OF CHRISTOPHER A. MENENDEZ

ON BEHALF OF DUKE ENERGY FLORIDA, LLC

JANUARY 15, 2025

I. INTRODUCTION AND QUALIFICATIONS.

Q. Please state your name and business address.

A. My name is Christopher A. Menendez. My business address is Duke Energy Florida, LLC, 299 1st Avenue North, St. Petersburg, Florida 33701.

Q. By whom are you employed and in what capacity?

A. I am employed by Duke Energy Florida, LLC ("DEF" or the "Company") as Director, Rates and Regulatory Planning.

Q. What are your responsibilities as Director, Rates and Regulatory Planning?

A. I am responsible for the Company's regulatory planning and cost recovery, including the Company's Storm Protection Plan ("SPP") filing.

Q. Please summarize your educational background and work experience.

A. I joined the Company on April 7, 2008. Since joining the Company, I have held various positions in the Florida Planning & Strategy group, DEF Fossil Hydro Operations Finance, and DEF Rates and Regulatory Strategy. I was promoted to my current position in April 2021. Prior to working at DEF, I was the Manager of Inventory Accounting and Control for North American Operations at Cott Beverages. I received a Bachelor of Science degree in Accounting from the University of South Florida, and I am a Certified Public Accountant in the State of Florida.

II. PURPOSE AND SUMMARY OF TESTIMONY.

Q. What is the purpose of your direct testimony?

A. The purpose of my direct testimony is to provide an estimate of the annual revenue requirements for the Company's 2026-2035 Storm Protection Plan ("SPP"), as required by Rule 25-6.030(3)(g), F.A.C., as well as an estimate of rate impacts for each of the first three years of the SPP for DEF's typical residential, commercial, and industrial customers, as required by Rule 25-6.030(3)(h), F.A.C.

Q. Have you prepared, or caused to be prepared under your direction, supervision, or control, exhibits in this proceeding?

A. Yes. I am co-sponsoring the Revenue Requirements and Rate Impact section of Exhibit No. (BML-1) attached to the direct testimony of Mr. Lloyd. This section of Exhibit No. (BML-1) is true and accurate to the best of my knowledge and belief.

Q. What are the estimated annual revenue requirements for the Company's 2026-2035 SPP?

A. That information is found on page 56 of Exhibit No. (BML-1).

Q. What are the estimated rate impacts for each of the first three years of the SPP for DEF's typical residential, commercial, and industrial customers?

A. That information is found on page 56 of Exhibit No. (BML-1).

Q. Has DEF complied with the requirements of Rule 25-6.030(3)(g) and (3)(h)?

A. Yes.

Q. Does this conclude your testimony?

A. Yes, it does.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

IN RE: REVIEW OF 2026-2035 STORM PROTECTION PLAN, PURSUANT TO RULE 25-6.030, F.A.C., DUKE ENERGY FLORIDA, LLC.

DOCKET NO. 20250015-EI

DIRECT TESTIMONY OF ALEXANDRA M. VAZQUEZ

ON BEHALF OF DUKE ENERGY FLORIDA, LLC

JANUARY 15, 2025

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name and business address.

A. My name is Alexandra M. Vazquez. My current business address is 3300 Exchange Place, Lake Mary, FL. 32746.

Q. By whom are you employed and in what capacity?

A. I am employed by Duke Energy Florida, LLC ("DEF" or the "Company") as Manager, Transmission Asset Management.

Q. What are your responsibilities as Manager, Transmission Asset Management?

A. My duties and responsibilities include strategic planning of Transmission reliability projects, completion of Transmission system outage investigations, management of Transmission asset health, and assurance of immediate Transmission engineering and technical support.

Q. Please summarize your educational background and work experience.

A. I earned a Bachelor of Science degree in Mechanical Engineering from the University of Central Florida. Additionally, in 2017, I received a Senior Reactor Operator certification at the Duke Energy Catawba Nuclear station. I have been with the Company, and its predecessor companies, since 2008. Throughout my 16 years at Duke Energy, I have held various leadership roles within both the nuclear generation and transmission organizations including Manager of Transmission Asset Management, Engineering Manager, Project Manager, Maintenance Supervisor, and Maintenance Superintendent. My current position, as described previously, is Manager of Transmission Asset Management in Power Grid Operations.

II. PURPOSE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your direct testimony?

A. The purpose of my direct testimony is to support the Company's filing of its Storm Protection Plan 2026-2035 ("SPP 2026"). My testimony will provide details of the Transmission investments, which includes the same Programs as previously approved in DEF's Storm Protection Plan 2023-2032 ("SPP 2023").

Q. Do you have any exhibits to your testimony?

A. No, but I am co-sponsoring the Transmission portions of the following exhibits:

- Exhibit No. (BML-1), DEF SPP Program Descriptions,

- Exhibit No. (BML-2), DEF SPP Support; and
- Exhibit No. (BML-3), DEF Service Areas.

Q. Please summarize your testimony.

A. My testimony presents the Transmission portion of the Company's SPP for the planning period 2026 through 2035. The Transmission Programs included in DEF's SPP 2026 build upon the previously approved DEF SPP 2020 and SPP 2023 Programs, taking into consideration updated reliability, asset, storm, and cost data. The Programs present a holistic approach to further strengthening the Company's infrastructure with the goal of reducing outage frequency and duration during extreme weather events and enhancing overall reliability.

III. OVERVIEW OF TRANSMISSION SPP 2026

Q. Please provide an overview of Duke Energy Florida's Transmission System.

A. A. The Company's transmission system includes approximately 5,300 circuit miles of transmission lines, which includes 500 kV, 230 kV, 115 kV and 69 kV lines. The Transmission system has more than 520 transmission substations and over 49,500 towers, poles and other related equipment and material that support a peak load of approximately 13,000 MWs. These assets deliver electric service to approximately 2 million retail customers located throughout a 20,000 square mile area including the densely populated areas around Orlando, St. Petersburg, and Clearwater, as well as rural north Florida and west central Florida.

DEF's transmission system is part of the Florida interconnected power grid that enables utilities to exchange power. Within Florida, the Company's system is extensively networked and interconnected with other investor-owned utilities, municipal electric utilities, and rural electric cooperatives.

In addition to power lines and substations, the system includes various other equipment and facilities such as control houses, computers, structures, transformers, regulators, capacitors, breakers, communication devices, and protective relays. Together, these assets provide the Company with considerable operational flexibility with its transmission system and allow DEF to provide safe and reliable power to DEF's customers.

Q. Please provide an overview of the Transmission Programs withing the SPP 2026.

A. DEF's Transmission plan addresses defined grid investment through hardening programs to withstand the impacts of extreme weather events to reduce restoration costs and customer minutes interrupted. The Transmission Programs referenced in Mr. Brian Lloyd's testimony and Exhibit No. (BML-1) are categorized into four (4) Programs (with associated sub-programs): Transmission Structure Hardening, Substation Hardening, Substation Flood Mitigation, and Transmission Vegetation Management.

IV. OVERVIEW OF PROGRAMS EVALUATED IN THE SPP

Q. Are the Programs in SPP 2026 the same as SPP 2023?

A. Yes, the DEF and Guidehouse teams selected the same portfolio of Programs for SPP 2026 as the previously approved SPP 2023. Detailed descriptions of these Programs can be found in Exhibit No. (BML-1).

Q. How did DEF develop the list of Programs for the SPP?

A. DEF first started with the existing SPP 2023 Programs and sub-programs and then consulted subject matter experts ("SMEs") with knowledge of the Transmission system and asset performance to evaluate whether any new system performance trends were observed that would meet the intent and requirements of Section 366.096, Florida Statutes and Rule 25-6.030, F.A.C. DEF reviewed the Transmission proposals in the other company's SPPs and industry trends to identify and validate potential programs. A complete list of the Program names and descriptions selected for inclusion in SPP 2026 can be found in Exhibit No. (BML-1).

Q. Are there any new Subprograms contained in DEF's SPP 2026 continuing Programs?

A. Yes, DEF is proposing to include Insulator Upgrades within the Transmission Structure Hardening Program. This subprogram will bring an accelerated enhancement of line insulators to decrease outage events and improve operation of the grid during extreme weather events. Line insulators will be prioritized based on inspection data and enhanced weather modeling. This sub-program is further discussed in Exhibit No. (BML-1).

Q. Are there any other adjustments to DEF's continuing SPP 2026 Programs?

A. Other than the subprogram addition discussed above, there are no additional modifications to the SPP 2026 Transmission Programs.

Q. Are any Programs or Subprograms completing deployment within the SPP 2026 10-Year planning period?

A. DEF expects to complete its Transmission Wood Pole Replacements subprogram during this 10-year planning period. This subprogram is estimated to be completed by the end of 2028.

Q. What benefits and other impacts will be experienced with the completion of the Transmission Wood Pole Replacement subprogram?

A. Wood poles are among the transmission assets most susceptible to damage, and completing their replacement with hardened assets will allow more customers to experience the immediate benefits of a hardened system (i.e., reduced and minimized outages). Completion of this subprogram will also allow DEF to focus on other structure hardening subprograms (e.g., tower upgrades). However, because other structure hardening subprograms such as Overhead Ground Wire replacement will no longer be performed in conjunction with wood pole replacements, the costs associated with those other subprograms (which are not increasing) will now be fully allocated rather than shared with the wood pole replacement. As always, DEF will continue to explore other opportunities for optimization.

Q. Are there other potential programs that DEF may consider in the future for inclusion in the SPP?

A. Yes, DEF will continue to monitor emergent technologies and system performance for other asset hardening opportunities that may warrant further review and consideration.

V. PROGRAM EVALUATION, PRIORITIZATION, AND SELECTION

Q. Are there differences in program evaluation and prioritization between SPP 2026 and SPP 2023?

A. Yes. Similar to the development of SPP 2020 and SPP 2023, DEF provided Guidehouse with asset, outage, and cost data sets to support the Program evaluation and prioritization. These data sets were updated with information current through 2023. As part of the refinement process from SPP 2023 to SPP 2026, DEF and Guidehouse updated values and model details which resulted in an enhanced model.

Q. Are there differences in how Programs were analyzed within the Guidehouse model?

A. No, as discussed in Mr. Lloyd's testimony, Guidehouse performed the same analysis for SPP 2026 as SPP 2023, the only modifications were to the inputs as discussed above.

Q. How were the Transmission projects selected to provide the greatest value to DEF's customers?

A. The Guidehouse model utilizes a benefit-cost analysis (BCA) approach, based on probability of damage and consequence of damage. This enhanced model ensued a prioritized list of projects. Utilizing this list, DEF's Transmission SMEs evaluated Programs for targeted opportunities for optimization, considering factors such as current projects in the area, critical customers, operational knowledge, and resource availability. The optimization process further involved evaluating Programs for remaining projects either on the same line segment or at the same substation with scheduled deployment within the next two years that would require the same outage. If a project or projects on the line segment or at the substation met this criterion, DEF selected this work to be completed alongside the initiating project. This targeted optimization provides synergies to minimize disruptions to our communities and customers, improve resource utilization and efficiency, and reduce the cost of execution. DEF continuously works to identify efficiencies and other available means to lower costs related to all Programs. If efficiencies can be identified and costs lowered, those lower costs may allow for DEF to identify and complete additional Program scope within the Planning horizon.

Q. Have you completed the substation flood mitigation evaluation, and what were the results?

A. Yes, DEF completed its program reevaluation. Utilizing the updated FEMA flood maps and additional detailed flood studies, DEF reviewed all substations within its territory. Site elevations were determined and compared with the FEMA flood elevations and historical flooding to determine potentially impacted sites and how the sites could be mitigated.

As a result of this review, six (6) sites are no longer deemed flood impacted sites, leaving five (5) sites within the program from the original SPP 2023 site list. An additional six (6) sites were newly identified to have flood impacts based on the recent analysis. The updated mitigation plan now includes a total of eleven (11) sites. These sites were input into the updated SPP 2026 model to determine prioritization.

VI. BENEFITS THAT DEF'S SPP INTENDS TO BRING TO DEF'S CUSTOMERS

Q. What benefits does DEF intend its SPP 2026 to deliver to its customers?

A. As Witness Lloyd has mentioned, DEF proposes to implement activities included in Exhibit No. (BML-1). DEF is confident that the activities included in this 10-Year plan will strengthen its infrastructure, reduce outage times associated with extreme weather events, reduce restoration costs, and improve overall service reliability.

Q. Has DEF experienced extreme weather events since it began deployment of SPP 2020 and SPP 2023 Programs?

A. Yes. DEF had the following named storms impact its service territory and customers: Hurricanes Ian and Nicole in 2022; Hurricane Idalia in 2023, Hurricane Debby in August 2024, Hurricane Helene in September 2024 and most recently, Hurricane Milton in October 2024.

Q. How have DEF's transmission storm hardened assets performed during the hurricanes mentioned above?

A. Immediately following an extreme weather event, damage assessment teams are dispatched to review how all transmission assets (hardened and otherwise) performed under these extreme weather conditions. Following this initial assessment, forensic analysis services are rendered. An outside contractor collects and analyzes damaged facilities and components after an extreme weather event. Sufficient data is collected at the failure sites to determine the nature and cause of the failure. Data includes the following: Asset identification, photographs, sample of damaged components as necessary, field technical assessment (soil conditions, exposure, vegetation, etc.), and inventory of associated hardware. Over the last few years, the results of this analysis provide correlation of the damaged assets to (1) storm intensity, (2) storm location, (3) asset condition, and (4) asset design.

Forensic analyses have shown thus far that the transmission storm hardened assets have performed as intended during these extreme weather events. Zero SPP hardened assets have failed due to extreme weather events. In reviewing our wood pole subprogram, DEF has seen a steady and consistent decline in number of failures over the years. During Hurricane Irma DEF had 139 non-hardened poles fail and Hurricane Michael DEF had 130 structures (towers) fail. Most recently, during a similar storm (Hurricane Milton), DEF had eighteen (18) non-hardened poles, and zero (0) structures (towers) fail.

Q. Does this conclude your testimony?

A. Yes, it does.