I. Meeting Packet

A. Revised Packet

B. Original Packet

A. Revised Packet

State of Florida
Public Service Commission
REVISED INTERNAL AFFAIRS AGENDA
Tuesday – June 19, 2018
9:30 A.M.
Room 105 - Gerald L. Gunter Building

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1. Review of Electric Utility Hurricane Preparedness and Restoration Actions – Draft Report and Recommended Actions. (Attachment 1)

2. General Counsel's Report

3. Executive Director's Report

4. Other Matters

BB/aml

OUTSIDE PERSONS WISHING TO ADDRESS THE COMMISSION ON ANY OF THE AGENDAED ITEMS SHOULD CONTACT THE OFFICE OF THE EXECUTIVE DIRECTOR AT (850) 413-6463.

Attachment 1

State of Florida

Public Service Commission

CAPITAL CIRCLE OFFICE CENTER • 2540 SHUMARD OAK BOULEVARD
TALLAHASSEE, FLORIDA 32399-0850

-M-E-M-O-R-A-N-D-U-M-

DATE: June 8, 2018

TO: Braulio L. Baez, Executive Director

FROM: Division of Engineering (E. Knoblauch, P. Buys, T. Thompson)
Office of Industry Development & Market Analysis (J. Breman)
Office of Consumer Assistance & Outreach (R. Hicks)
Office of the General Counsel (R. Gervasi, R. Dziechciarz)

RE: Docket No. 20170215-EU - Review of Electric Utility Hurricane Preparedness and Restoration Actions.

CRITICAL INFORMATION: ACTION IS NEEDED - Please place on the June 19, 2018 Internal Affairs. Commission approval of draft report and recommended future actions is sought.

On October 3, 2017, the Commission opened Docket No. 20170215-EU to review the hurricane preparedness and restoration actions of Florida's electric utilities. The purpose of the review was to identify potential areas where infrastructure damage, outages, and restoration time for customers could be minimized in the future. Commission staff issued several data requests to all electric utilities and sought input from customers and non-utility stakeholders. On May 2-3, 2018, the Commission held a workshop to further explore the preparedness and restoration actions of Florida's electric utilities. A review of the information received and conclusions are included in the attached draft report. Staff is seeking approval of the report and to close Docket No. 20170215-EU.

Based on the review and conclusions contained in the attached report, staff also recommends the Commission initiate the following actions which are discussed in more detail below.

Recommended Action

Open storm hardening plan[1] review dockets for all investor-owned utilities (IOUs) and direct staff to gather the following information:

- A listing and summary of meetings with local governments regarding tree trimming and the identification of critical facilities.
- A description of the IOU's staffing practices for local emergency operations centers during a major storm event.
- A description of how each utility prepares for and responds to roadway congestion and fuel availability issues.
- A comparison of all viable alternatives considered before selecting each proposed project identified in the next storm hardening plan filings.

Utilities reported that they have regular meetings with local governments regarding tree trimming and identification of critical facilities. However, the utilities, local government representatives, and the Office of Public Counsel agreed at that communication among all affected parties could be improved. During the workshop, some local government representatives expressed a desire for additional utility staffing at local emergency operations centers.

Consistent with prior hurricanes, a major impediment towards restoration was fallen trees or branches that were outside of the utilities' rights of way. Other impediments to restoration unique to Hurricane Irma were roadway congestion and lack of motor fuel availability due to the size and scale of evacuations. IOUs should take these issues into consideration when reviewing their storm hardening plan.

Staff requested data from the IOUs on the performance of hardened and non-hardened facilities. Utilities responded that this information was not tracked in the days following Hurricane Irma as they were intent on restoring power as quickly as possible. However, some performance data for hardened and non-hardened facilities was presented at the workshop, which showed that the storm hardening efforts by the Commission and utilities appear to be working.

Approval of an IOU's storm hardening plan does not equate to approval for cost recovery. During a general rate case, the costs for storm hardening are taken into consideration and the utility has the burden of proof to show that the costs are prudent for cost recovery. However, recent rate case proceedings have resulted in settlement agreements between the parties, and the storm hardening costs are not specifically identified in the settlement agreements. In order to enhance the review process related to storm hardening activities, a comparison of all viable alternatives considered by the IOUs should be provided before selecting proposed hardening projects. By reviewing such comparisons, the Commission can ensure that storm hardening is being pursued in a cost-efficient manner. For example, a utility should be able to explain why a proposed underground project is preferable to a hardened overhead project or additional smart grid investment, etc.

[1] On February 1, 2007, the Commission adopted Rule 25-6.0342, F.A.C., to require IOUs to update their storm hardening plans every 3 years, and codified the contents to be included in each plan. The next update is currently scheduled to be filed in 2019.

Recommended Action

Direct staff to initiate management audits to:

- Examine the procedures and processes used by the IOUs to estimate and disseminate outage restoration times following a major storm.
- Examine the procedures and processes used by the IOUs to inspect and schedule maintenance on transmission structures.

Many customer comments that were submitted expressed frustration with inaccurate power restoration estimates. Some local government representatives also expressed similar concerns. While this did not appear to hinder actual restoration, customers were upset based on their expectations.

As part of their storm hardening plans, IOUs conduct post-storm forensic analyses which include a review of storm-related data and an assessment of damaged facilities that did not perform as designed. Despite regular inspection requirements, post-storm forensic reports identified corrosion and/or wood rot as a contributing factor to the failure of some Duke Energy Florida, LLC transmission towers. Post-storm analyses provided by Florida Power & Light Company reported five wooden transmission pole failures and Tampa Electric Company reported ten wooden transmission pole failures.

A more thorough examination of the procedures and processes used by the IOUs to estimate and disseminate outage restoration times following a major storm and the inspection and maintenance of transmission structures may identify areas of improvement in the future.

Observations for Consideration

Proactive tree trimming has been a key initiative of the Commission, and the results of the review indicate that vegetation continues to be a primary cause of damage and outages. Entities with authority over tree trimming policies should carefully consider options that would enhance the ability of electric utilities to conduct vegetation management within the public road rights-of-ways and easements in order to further reduce outages and restoration costs. Expanding the ability of electric utilities to work with local communities and private land-owners to conduct tree trimming and problem tree removal on private property should also provide additional benefits.

EK:pz

Attachment

cc: Office of the General Counsel (K. Hetrick)
Deputy Executive Director, Technical (M. Futrell)
Deputy Executive Director, Administrative (A. Lynn)

Executive Summary

The Florida Public Service Commission (PSC or Commission) has broad authority over the adequacy and reliability of the state's electric transmission and distribution grids, as well as setting rates and all cost-recovery matters for investor-owned electric utilities (IOUs).

To promote strengthening of Florida's electric infrastructure following the intense 2004 and 2005 hurricane seasons, the Commission adopted extensive storm hardening initiatives, such as wooden pole inspection and replacement, to reduce the frequency and length of outages. The Commission ordered IOUs to file updated storm hardening plans for Commission review every three years. Those initiatives and the utilities' hardening plans have been the roadmap for aggressively improving resilience during the past 12 years.

There were no major storm landfalls in Florida until the four hurricanes of 2016-2017, making them the first opportunity to gather performance data from the programs.

On October 3, 2017, the Commission opened Docket No. 20170215-EU to review electric utility preparedness and restoration actions, and to identify potential areas where infrastructure damage, outages, and recovery time for customers could be minimized in the future. Commission staff issued several data requests to all utilities and sought input from non-utility stakeholders and customers, including a customer comments portal on the PSC website.

On May 2-3, 2018, the Commission held a workshop in which information was presented by utilities, customers and their representatives, and local governments.

Key findings

- Data collected during and after the storms show Florida's aggressive hardening programs work. The length of outages has been reduced markedly from the 2004-2005 storm seasons. (Page ____)
- Hardened overhead facilities had substantially lower failure rates. (Page ____)
- Underground facilities had minimal failure rates. (Page ____)
- The three largest IOUs currently have 37.6% of distribution lines underground. Underground line is being added at an average rate of 440 miles per year. (Page ____)
- Despite substantial, well documented improvement, customers were dissatisfied with the extent of outages and restoration times. The public's expectations are rising, indicating resilience and restoration will have to continually improve. (Page ____)
- Years of trimming programs have controlled vegetation intruding into utilities' right of way, now the primary cause of outages is vegetation and other debris coming from outside the rights of way, where utilities typically don't have access to trim. (Page ____)

- Restoration time estimates and customer communication issues caused significant additional dissatisfaction. (Page ____)

- Some local governments see a need for better coordination and communication with utilities during and after storms. (Page ____)

A more detailed description and analysis of the information collected are in the following pages. Consensus items describing the Commission's proposed actions and new policy initiatives can be found on page ____.

Section I: Background

In response to the intense impact that the 2004 and 2005 hurricanes had on the state, the 2006 Florida Legislature directed the Commission to ". . . conduct a review to determine what should be done to enhance the reliability of Florida's transmission and distribution grids during extreme weather events, including the strengthening of distribution and transmission facilities."

Based on its review of the 2004 and 2005 hurricane seasons, the Commission provided three recommendations in a 2007 report to the Legislature:[1] (1) maintain a high level of storm preparation; (2) strengthen the electric infrastructure to withstand severe weather events with the use of hardening activities; and (3) establish additional planning tools to identify and implement instances where undergrounding is appropriate as a means of storm hardening.

As discussed in the 2007 report to the Florida Legislature, ". . . the Commission has been careful to balance the need to strengthen the state's electric infrastructure to minimize storm damage, reduce outages, and reduce restoration time while mitigating excessive cost increases to electric customers.

The 2006 Order

In 2006, after considering recommendations from the utilities on feasibility, the Commission ordered IOUs to inspect wooden poles every eight years to assure weakened ones are replaced, and to implement 10 storm preparedness initiatives:

- Three-year Vegetation Management Cycle for Distribution Circuits
- Audit of Joint-Use Attachment Agreements (shared use of poles with telecom)
- Six-year Transmission Structure Inspection Program
- Hardening of Existing Transmission Structures
- Development of Transmission and Distribution Geographic Information System
- Collection of Post-Storm Data and Forensic Analysis
- Collection of Detailed Outage Data Differentiating Between the Reliability Performance of Overhead and Underground Systems
- Increased Utility Coordination with Local Governments
- Collaborative Research on Effects of Hurricane Winds and Storm Surge
- Development of Natural Disaster Preparedness and Recovery Program Plans

[1] Report to the Legislature on Enhancing the Reliability of Florida's Distribution and Transmission Grids During Extreme Weather, July 2007, http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/EnergyInfrastructure/UtilityFilings/docs/stormhardening2007.pdf

The Commission also ordered electric utilities to file updated storm hardening plans every three years, and began annual Hurricane Season Preparation Workshops, which allow the IOUs, municipals, and cooperatives to share individual hurricane season preparation activities. These practices continue today.

Also in 2006, the Commission required Florida's local exchange telecommunications companies to implement inspections of their wooden poles.[2] The Commission's authority to impose that requirement was subsequently repealed in 2011 as part of a number of deregulatory changes made to Chapter 364, F.S.

2016-2017 Hurricanes

During September and October 2016, Florida was impacted by two hurricanes: Hermine and Matthew. In 2017, Hurricanes Irma and Nate impacted Florida. Hurricane Irma made landfall in Florida on September 10, 2017, as a Category 4 hurricane in Monroe County, followed by a second landfall as a Category 3 hurricane in Collier County, providing the first major test to the system since 2005.

On October 3, 2017, the PSC opened Docket No. 20170215-EU to identify potential areas where infrastructure damage, outages, and recovery time for customers could be minimized in the future. In order to identify these areas, Commission staff issued several data requests to all utilities in the areas of preparation, restoration practices, customer communication, outage causes, facility performance, meteorological data, and suggested improvements.

Commission staff also sought comments from non-utility stakeholders and customers. A summary of the non-utility stakeholders' comments are provided in Appendix A. On October 9, 2017, a customer portal was opened on the Commission's website, allowing customers to submit comments regarding their reaction to utility restoration/communication efforts. The portal was closed on May 1, 2018, with 701 customer comments and and 14 non-utility stakeholder comments received.

On May 2-3, 2018 the Commission held a workshop. Leading up to the workshop, staff provided topics for utilities to address, which included preparation and restoration processes, hardened vs. non-hardened facility performance, underground vs. overhead performance, impediments to restoration, customer/stakeholder communication, and suggested improvements based on lessons learned.

[2] Order No. PSC-06-0168-PAA-TL, issued March 1, 2006, in Docket No. 20060077-TL, *In re: Proposal to require local exchange telecommunications companies to implement ten-year wood pole inspection program.*

At the workshop, the following provided input:

- FPL
- DEF
- TECO
- GPC
- FPUC
- Florida Electric Cooperatives Association, Inc. (FECA)
- Florida Municipal Electric Association (FMEA)
- OPC
- Florida Industrial Power Users Group (FIPUG)
- Florida Retail Federation (FRF)
- City of Dunedin
- St. Johns County
- City of Monticello

All of the IOUs provided data at the workshop that showed hardened facilities performed better than non-hardened facilities. There were clearly fewer outages for underground than overhead circuits.

The utilities suggested improvements such as targeted undergrounding projects for certain lateral circuits, possible legislation to require inspections and hardening of non-electric utility poles, and additional coordination and communication regarding vegetation outside of the utilities' rights of way.

Non-utility stakeholders, including local governments, suggested increased coordination and more utility staffing at local EOCs.

Section II: Hurricane Preparedness Practices

Commission Role

No amount of preparation can eliminate outages in extreme weather events, so all utility regulators work to reduce and shorten outages.

In support of sharing individual hurricane preparation activities among IOUs, Municipals, and Cooperatives, the Commission has held annual Hurricane Season Preparation Workshops since 2006. The workshops provide an opportunity for electric utilities to discuss their storm preparation and restoration processes, coordination with local governments, and public outreach.

The Commission's Division of Engineering is responsible for staffing the Emergency Support Function 12 (ESF-12) in the State's Emergency Operations Center. ESF-12 coordinates with the electric and natural gas utilities operating in Florida to ensure the integrity of their energy supply systems are maintained during emergency situations. In this role, Commission staff also participates in an annual hurricane preparedness drill and other EOC related exercises.

The Commission provides information to consumers regarding storm preparedness, such as hurricane survival kits, portable generator safety, and ways to prepare your home before a storm. In the event of a storm, links to current Florida Division of Emergency Management information are highlighted on the PSC website (www.floridapsc.com), as well as links to the Federal Emergency Management Agency (FEMA) and the National Hurricane Center. The PSC issues statewide news releases at the beginning of each storm season regarding hurricane workshops, or Commission decisions on utility storm preparedness plans. All of this information is distributed via the PSC Twitter account (https://twitter.com/floridapsc) at appropriate times throughout the year.

Utility Preparedness and Storm Hardening Activities

Throughout the year, utilities participate in hurricane exercises and drills in order to better prepare for a storm event. Prior to hurricane season, utilities ensure that they have the required internal materials on hand, as well as commitments for external resources which may be needed following a storm. Utilities also partake in hurricane preparedness exercises and meetings with local governments and the state Emergency Operations Center, and they ensure that the proper critical facilities (i.e., hospitals, water and wastewater treatment plants, and fire stations) are identified.

The activities outlined in each IOUs' storm hardening plan vary to a degree; however, all 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.

Utilities typically focus hardening efforts on transmission facilities, as these can impact large numbers of customers. Hardening efforts are also prioritized for facilities that serve critical infrastructure, such as hospitals, first responders, water and wastewater treatment plants, and local EOCs. Such facilities are generally restored first following a storm event.

IOUs complete tree trimming of their distribution circuits, composed of laterals and feeders, in three- to six-year cycles. Feeders run outward from substations and have the capability of serving thousands of customers. Laterals branch from the feeder circuits and are the final portion of the electric delivery system, serving a smaller portion of customers, and are typically associated with residential areas.

Each year, IOUs trim a certain percentage of their total lateral and feeder miles as part of their hardening plans; however, the trees trimmed only include those that are in the utilities' rights of way. Most IOUs trim overhead feeder circuits over a three-year trim cycle, excluding TECO which is currently on a four-year trim cycle.[3] For overhead laterals, IOUs must complete all trimming during a maximum six-year cycle.[4]

Table 2-1 below lists the number of miles trimmed that each IOU has completed for its feeder and lateral circuits since 2006. The number of miles provided includes planned tree trimming and may not include hot-spot or mid-cycle trimming. Hot-spot tree trimming occurs when crews are sent to specific areas that require unscheduled trimming due to rapid growth.

Table 2-1.
Vegetation Clearing from Feeder and Lateral Circuits (in Miles)

	DEF		FPL		FPUC		GPC		TECO	
	Feeders	Laterals	Feeders	Laterals	Feeders	Laterals	Feeders	Laterals	Feeders	Laterals
2006	723	2,703	10,094	825	-	-	-	-	268	840
2007	2,112	2,203	4,454	2,215	-	-	1,878	675	363	945
2008	708	2,544	4,262	2,078	59	86	274	821	374	806
2009	467	3,178	4,151	2,768	63	96	274	821	374	806
2010	787	4,139	5,222	2,741	65	84	281	1,060	617	1,634
2011	2,370	1,132	4,337	3,367	68	205	259	1,530	606	1,514
2012	196	3,228	4,045	3,703	52	123	240	857	435	1,282
2013	476	3,810	4,637	4,124	67	129	240	1,293	374	1,098
2014	3,297	2,782	4,249	3,685	52	145	241	1,294	465	1,161
2015	1,024	3,579	4,209	3,817	51	134	241	913	454	1,146
2016	1,016	2,173	4,418	3,745	62	188	241	331	386	926
2017	2,106	1,909	4,381	3,560	29	86	241	446	199	627

Source: IOUs' 2006-2017 distribution reliability reports.

As part of each IOUs' storm hardening plan, the Wooden Pole Inspection Program requires each utility to inspect and assess the strength of all of its installed wooden poles over an eight-year

[3] Order No. PSC-12-0303-PAA-EI, issued June 12, 2012, in Docket No. 20120038-EI, *In re: Petition to modify vegetation management plan by Tampa Electric Company*.
[4] Order No. PSC-07-0468-FOF-EI, issued May 30, 2007, in Docket No. 20060198-EI, *In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation cost estimates*.

period. IOUs also have wooden pole replacement programs in place where a select number of existing poles are replaced with hardened poles. The National Electric Safety Code Extreme Wind Loading standards are used in designing replacement poles. Table 2-2 shows the number of wooden poles replaced from 2006 to 2017.

Table 2-2.
Wooden Pole Replacement

	DEF		FPL		FPUC		GPC	TECO	
	Trans.	Distr.	Trans.	Distr.	Trans.	Distr.	Distr.	Trans.	Distr.
2006	-	-	307	2,334	-		-	-	-
2007	956	1,130	1,471	8,164	-		185	494	1,536
2008	866	1,903	1,966	7,533	47		736	781	2,056
2009	704	3,018	3,206	7,342	34		969	713	1,640
2010	-	-	1,409	10,639	215		418	900	2,815
2011	635	2,887	1,559	9,942	215		1,060	1,060	3,328
2012	803	4,670	816	10,454	242		1,032	683	4,957
2013	1,347	5,722	1,106	13,639	135		380	866	6,572
2014	2,028	5,597	2,070	12,777	536		790	720	6,038
2015	1,738	8,420	1,888	15,089	382		676	649	5,392
2016	698	4,429	1,737	12,067	254		693	940	6,701
2017	530	2,654	1,934	8,486	-		746		
Total	10,305	40,430	19,469	118,466	2,060		6,939	7,806	41,035

Source: Document Nos. 01516-2018, 01517-2018, 01518-2018, 01519-2018, 01520-2018, DEF's 2006-2017 distribution reliability reports.

In response to staff's data requests, the IOUs stated that the majority of recent underground projects were for new construction, rather than the conversion of overhead to underground. Since 2006, the installed underground facilities have increased by approximately 5,300 miles for the IOUs. The total amount of installed underground facilities during the past five years was approximately 2,200 miles.

The construction of underground electrical distribution systems, when compared with overhead systems, is more expensive. For construction of underground, the customer is responsible for the difference in the costs between underground and overhead, which often results in an installation barrier. Pursuant to Rules 25-6.0342 and 25-6.064, F.A.C., the costs and benefits of storm hardening are factored into the cost difference calculation for new construction or conversion to underground facilities, as reflected on each IOUs' tariff.

Storm Hardening Cost Recovery

While an IOU's storm hardening plan must be approved by the Commission, this does not guarantee an IOU the recovery of all incurred costs for the implementation of the plan. Storm hardening costs are addressed during an IOU's general rate case proceeding, and those costs are covered in base rates since they are considered a part of providing electric service in Florida.

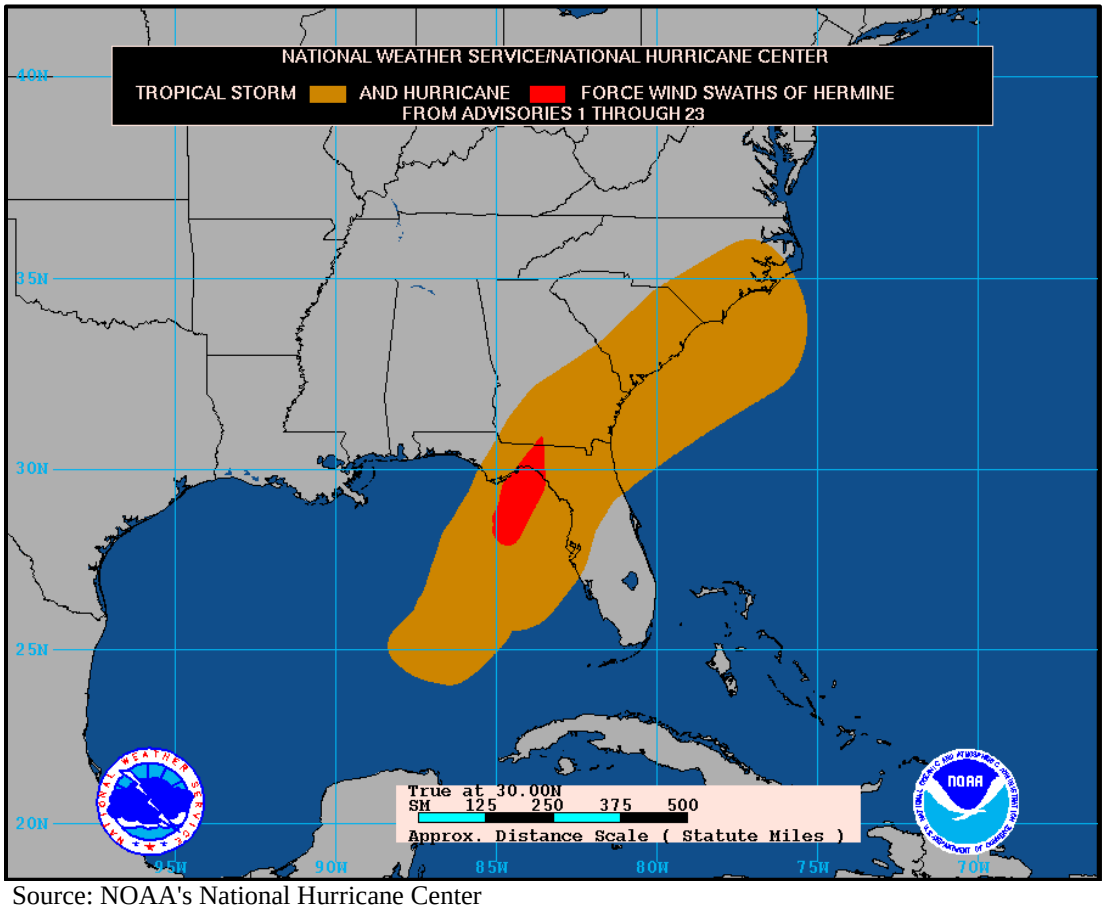
During a general rate case, the costs for storm hardening are taken into consideration and the Commission makes a ruling on whether the costs are prudent. However, recent rate case proceedings have resulted in settlement agreements between the parties, and figures for storm hardening costs are not specified in the agreements.

Section III: Summary of 2016 and 2017 Storms

Hurricane Hermine

Hurricane Hermine made landfall on September 2, 2016, near Wakulla and Jefferson counties. Hurricane Hermine was a Category 1 hurricane when it made landfall, primarily affecting the Big Bend area. Figure 3-1 illustrates the path of Hurricane Hermine, and the areas that experienced tropical storm and hurricane force winds. The National Hurricane Center defines tropical storm force winds as winds between 39 miles per hour (mph) to 73 mph. Winds that are equal to or exceeding 74 mph are defined as hurricane force winds.

Figure 3-1.
Hurricane Hermine – Tropical Storm and Hurricane Force Winds



Source: NOAA's National Hurricane Center

Wind, rainfall, and storm surge data was requested from IOUs, Municipals, and Cooperatives for each hurricane. A total of 36 utilities provided data and the maximum reported sustained winds, wind gusts, rainfall, and storm surge for Hurricane Hermine, summarized in Appendix C. The three counties that experienced some of the highest sustained winds and wind gusts from

Hermine were Jefferson, Madison, and Taylor. These counties also received high levels of rainfall; however, the two counties with the largest amounts of rainfall were Manatee and Sarasota. These two counties did not rank highest for any other category, and appear to be outliers in the reported weather data. The reason for the large amount of rain experienced in Manatee and Sarasota counties may have been due to strong storm bands that hit that part of the state. The three counties that had the largest storm surges were Dixie, Taylor, and Wakulla. All of these counties, with the exception of Manatee and Sarasota, were located in the area where Hurricane Hermine made landfall.

Table 3-1 provides the five counties with the highest number of outages for Hurricane Hermine. This outage data was reported to the state EOC by IOUs, Municipals, and Cooperatives at set intervals of reporting times. The percentages of accounts without power were calculated based on the peak number of customer accounts without power divided by the total number of customer accounts for that county, which includes IOUs, Municipals, and Cooperatives customers. The total peak percentage of accounts in the state without power was approximately 3 percent for Hurricane Hermine. Appendix B provides a comprehensive list of the peak number of customer accounts by county that were without power for each hurricane.

Table 3-1.
Hurricane Hermine – Five Counties with Highest Maximum Outages

	Max. Account Outages	Max. Percent of Account Outages
Hamilton	5,864	87.9%
Jefferson	5,762	71.5%
Lafayette	2,965	71.5%
Madison	7,278	69.0%
Wakulla	14,009	93.0%

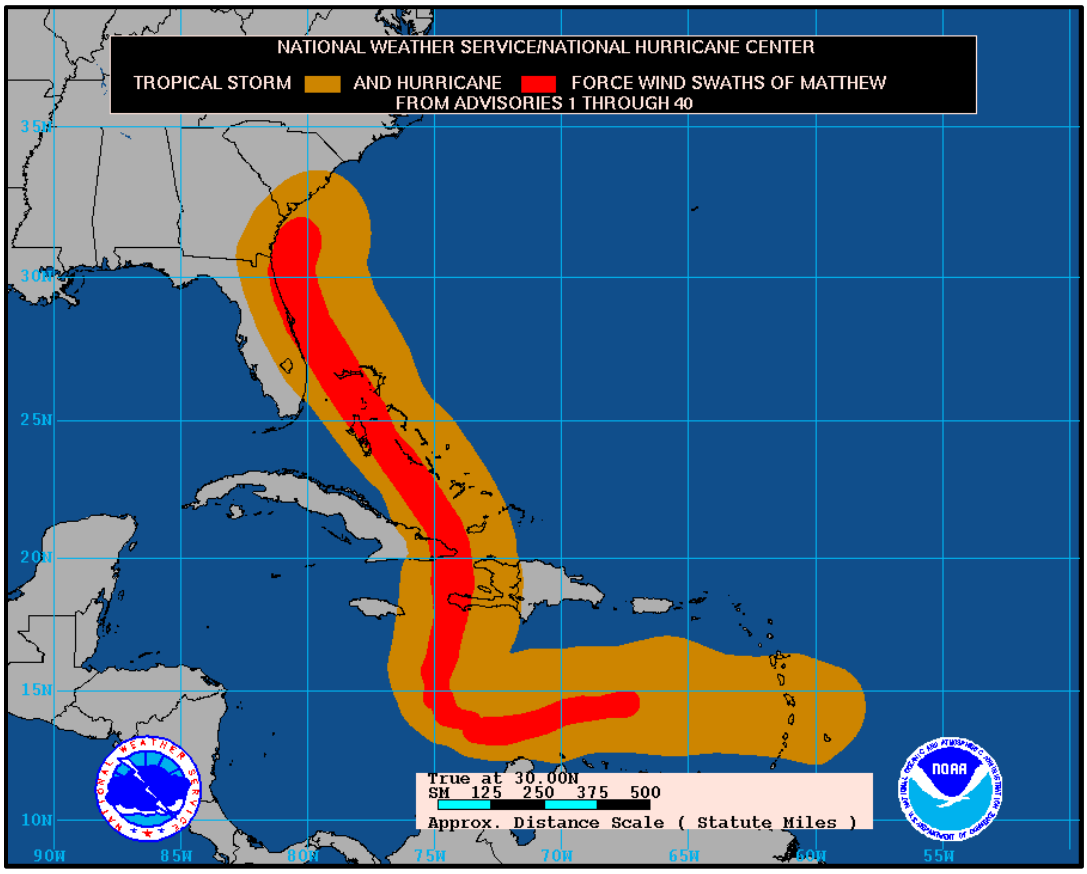
Source: State EOC power outage reports.

The outages for Jefferson, Madison, and Wakulla counties correlate to the reported weather data as they were among the counties that experienced the highest winds, rainfall, and storm surges. Wind data was not reported for Hamilton and Lafayette counties, though they both received large amounts of rainfall.

Hurricane Matthew

While Hurricane Matthew never made landfall in Florida; it passed along Florida's east coast shoreline, where some areas experienced sustained hurricane force winds. Hurricane Matthew began as a Category 4 hurricane on October 7, 2016, but weakened and later became a Category 2 hurricane northeast of Jacksonville Beach on October 8, 2016. Figure 3-2 illustrates the path of Hurricane Matthew, and the areas that experienced tropical storm and hurricane force winds.

Figure 3-2.
Hurricane Matthew – Tropical Storm and Hurricane Force Winds



Source: NOAA's National Hurricane Center

Wind speed, rainfall, and storm surge data for Hurricane Matthew is contained in Appendix D. The three counties that experienced some of the highest sustained winds and wind gusts for Hurricane Matthew were Brevard, St. Johns, and Volusia. From the reported rainfall data, the counties with the three highest amounts of rainfall were Brevard, Indian River, and St. Lucie. The three counties that had the largest storm surges were Flagler, Nassau, and St. Johns. All of these counties are located on Florida's east coast and correspond to the path of storm. Table 3-2 provides the five counties with the highest number of outages for Hurricane Matthew. The total peak percentage of customer accounts in the state without power was 11 percent.

Table 3-2.
Hurricane Matthew – Five Counties with Highest Maximum Outages

	Max. Account Outages	Max. Percent of Account Outages
Flagler	57,016	100.0%
Indian River	59,244	67.2%
Putnam	27,393	66.8%
St. Johns	78,610	89.6%
Volusia	257,718	92.0%

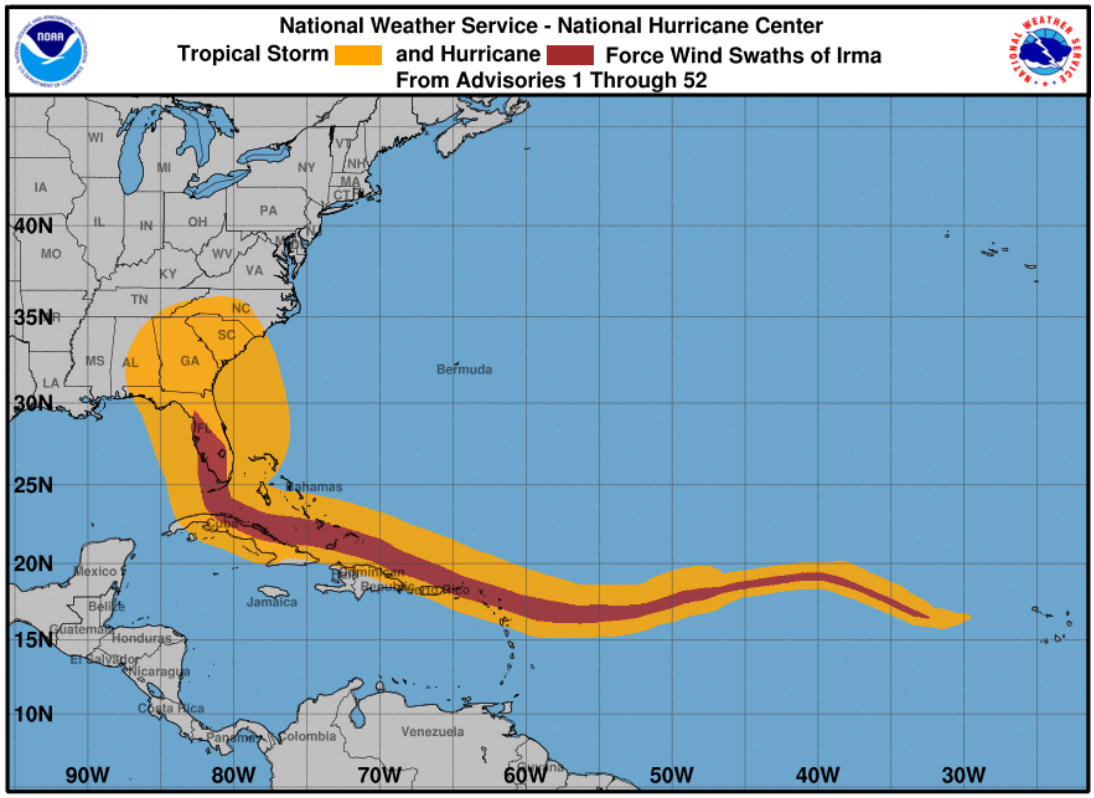
Source: State EOC power outage reports.

The outages for Flagler, Indian, St. Johns, and Volusia counties correlate to the reported weather data as they were among the counties that experienced the highest winds, rainfall, and storm surges. Rainfall data was not reported for Putnam County; however, it is located next to St. Johns County, which experienced severe weather conditions.

Hurricane Irma

Hurricane Irma was the first major hurricane to make landfall in Florida since the 2004 and 2005 hurricane seasons. On September 10, 2017, Hurricane Irma made landfall in the Florida Keys as a Category 4 hurricane and weakened to a Category 3 hurricane as it made a second landfall near Marco Island, Florida on the same day. The storm continued to weaken as it moved over Florida, affecting all 67 counties in the state and resulting in widespread power outages. Figure 3-3 illustrates the path of Hurricane Irma, and the areas that experienced tropical storm and hurricane force winds.

Figure 3-3.
Hurricane Irma – Tropical Storm and Hurricane Force Winds



Source: NOAA's National Hurricane Center

Wind speed, rainfall, and storm surge data for Hurricane Irma is contained in Appendix E. The three counties that experienced the highest maximum sustained winds for Hurricane Irma were Collier, Monroe, and Polk. The largest amount of rainfall was reported for Bradford, Hillsborough, and St. Lucie counties. The three counties that had the largest maximum storm surge were Collier, Monroe, and Nassau. Due to the path of Hurricane Irma, many of the southernmost counties, such as Monroe and Collier, experienced high winds and storm surges, while parts of central Florida had large amounts of rain. Additionally, parts of northeast Florida, such as Nassau County, experienced high winds and storm surges due to the outer bands and the path of the storm.

Table 3-3 provides the five counties with the highest number of outages for Hurricane Irma. The total peak percentage of customer accounts in the state without power was 62 percent.

Table 3-3.
Hurricane Irma – Five Counties with Highest Maximum Outages

	Max. Account Outages	Max. Percent of Account Outages
Hardee	11,976	97.4%
Hendry	18,750	100.0%
Highlands	62,010	99.3%
Nassau	43,740	97.6%
Okeechobee	21,990	96.5%

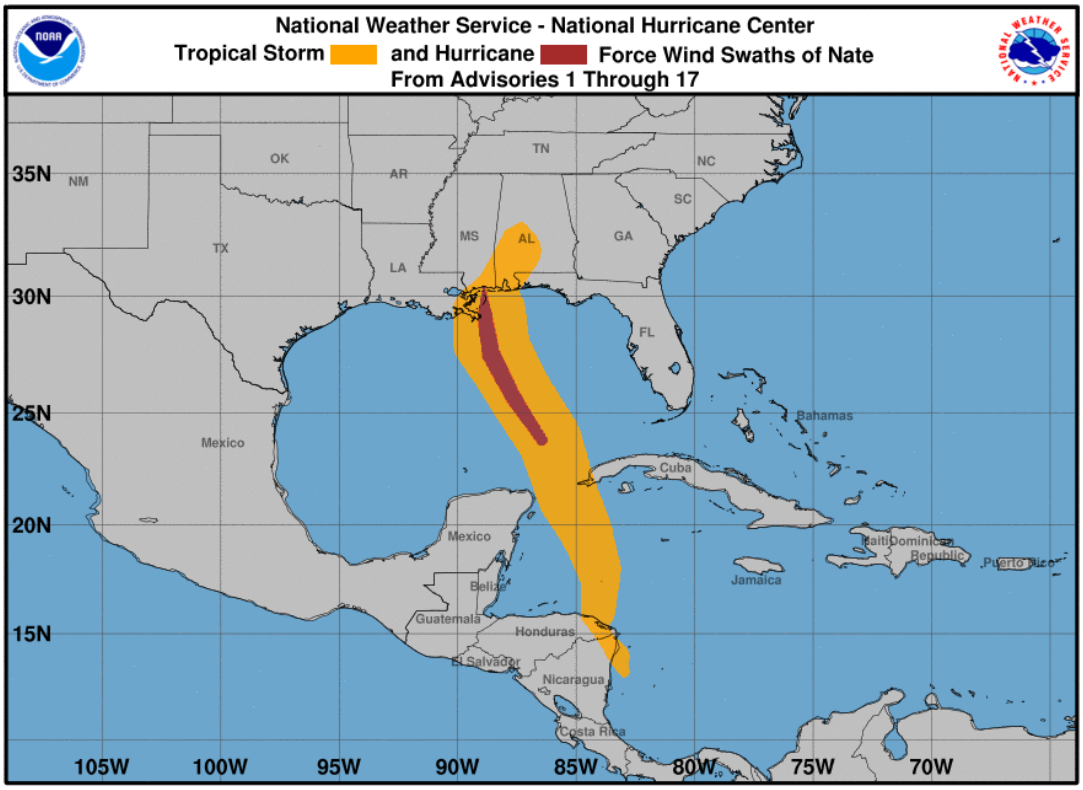
Source: State EOC power outage reports.

The outages for Nassau County correlate to the reported weather data as it was among the counties that experienced high storm surges. Okeechobee, Hardee, Henry, and Highlands counties are in close proximity to one another and are located in south Florida, near Hurricane Irma's landfall. All of these counties experienced wind gusts over 100 mph and all but Okeechobee recorded over 10 inches of rainfall.

Hurricane Nate

On October 7, 2017, Florida was impacted by a second storm, Hurricane Nate, which made its first landfall at the mouth of the Mississippi River as a Category 1 hurricane, followed by a second landfall near Biloxi, Mississippi on the same day. While Hurricane Nate did not make landfall in Florida, parts of the panhandle were impacted by the hurricane. Figure 3-4 illustrates the path of Hurricane Nate, and the areas that experienced tropical storm and hurricane force winds.

Figure 3-4.
Hurricane Nate – Tropical Storm and Hurricane Force Winds



Source: NOAA's National Hurricane Center

Wind speed, rainfall, and storm surge data for Hurricane Nate is contained in Appendix F. The impact of Hurricane Nate was much smaller in scope compared to the previous three hurricanes. The three counties that experienced the highest sustained winds, wind gusts, and rainfall were Escambia, Okaloosa, and Santa Rosa. The three counties that had the highest storm surges were Escambia, Franklin, and Santa Rosa. All of these counties are located in Florida's panhandle, close to where Hurricane Nate made landfall. Table 3-4 provides the five counties with the highest number of outages for Hurricane Nate. The total peak percentage of accounts in the state without power was 0.1 percent.

Table 3-4.
Hurricane Nate – Five Counties with Highest Maximum Outages

	Max. Account Outages	Max. Percent of Account Outages
Escambia	5,384	3.4%
Holmes	77	0.7%
Okaloosa	6,382	5.9%
Santa Rosa	1,712	2.2%
Walton	613	1.0%

Source: State EOC power outage reports.

The outages for Escambia, Okaloosa, and Santa Rosa counties correlate to the reported weather data as they were among the counties that experienced some of the highest winds, rainfall, and storm surges. While Walton County did not have the highest reported winds and rainfall, it experienced high winds comparable to Okaloosa County, as well as receiving several inches of rain. Wind data was not reported for Holmes County; however, it is located in the panhandle area near Okaloosa and Walton counties.

Section IV: Review of Outage Restoration Activities

Restoration Process

The restoration process is a year-round activity. Many utilities across the state engage in exercises that simulate storms in order to better prepare for an actual hurricane or other significant weather event.

In an actual hurricane, utilities may initiate pre-staging meetings and activities as early as 240 hours before landfall, which may include requests for mutual aid. Utilities communicate with county EOCs to identify critical facilities (i.e., hospitals, water and wastewater treatment plants, and fire stations) and coordinate on other restoration activities.

Before a storm makes landfall, an assessment of potential damage is completed by utilities based on the forecasted path of the storm. This information can be used to determine if mutual aid and additional material resources should be requested.

As the storm approaches, repair activities will continue until winds reach 35-40 miles per hour, at which time crews will be called back for a stand-down period. Once winds drop below 35-40 miles per hour and weather conditions are considered to be safe following a storm, utility crews are re-deployed to continue the restoration process.

Once the storm has passed, a post-storm damage assessment is completed, where utilities can establish what facilities have been damaged, refine restoration time estimates, manage workloads, and allocate resources to where they are needed.

Restoration begins with repairs to generation plants and transmission facilities that sustained damage, followed by repairs to substations and feeders. Substations and feeders that power critical infrastructure are prioritized first in order to get those necessary facilities back in service.

Feeders that serve the largest number of customers are restored next, and finally laterals that serve neighborhoods with fewer customers are repaired and restored. Overall, utilities strive to restore as many customers as possible in the shortest amount of time.

Based on a review of the utility presented data for each hurricane, no abnormalities were identified between storms for the restoration process. Hurricane Irma affected the entire state and was the first significant test of Florida's electric infrastructure since the 2004 and 2005 hurricane season. For simplification purposes, and due to the size and scope of the storm, the following subsections on restoration, outage causes, mutual aid, and impediments are specific to Hurricane Irma only. Data from other storms was used for comparison purposes to determine if there were any anomalies or unique circumstances.

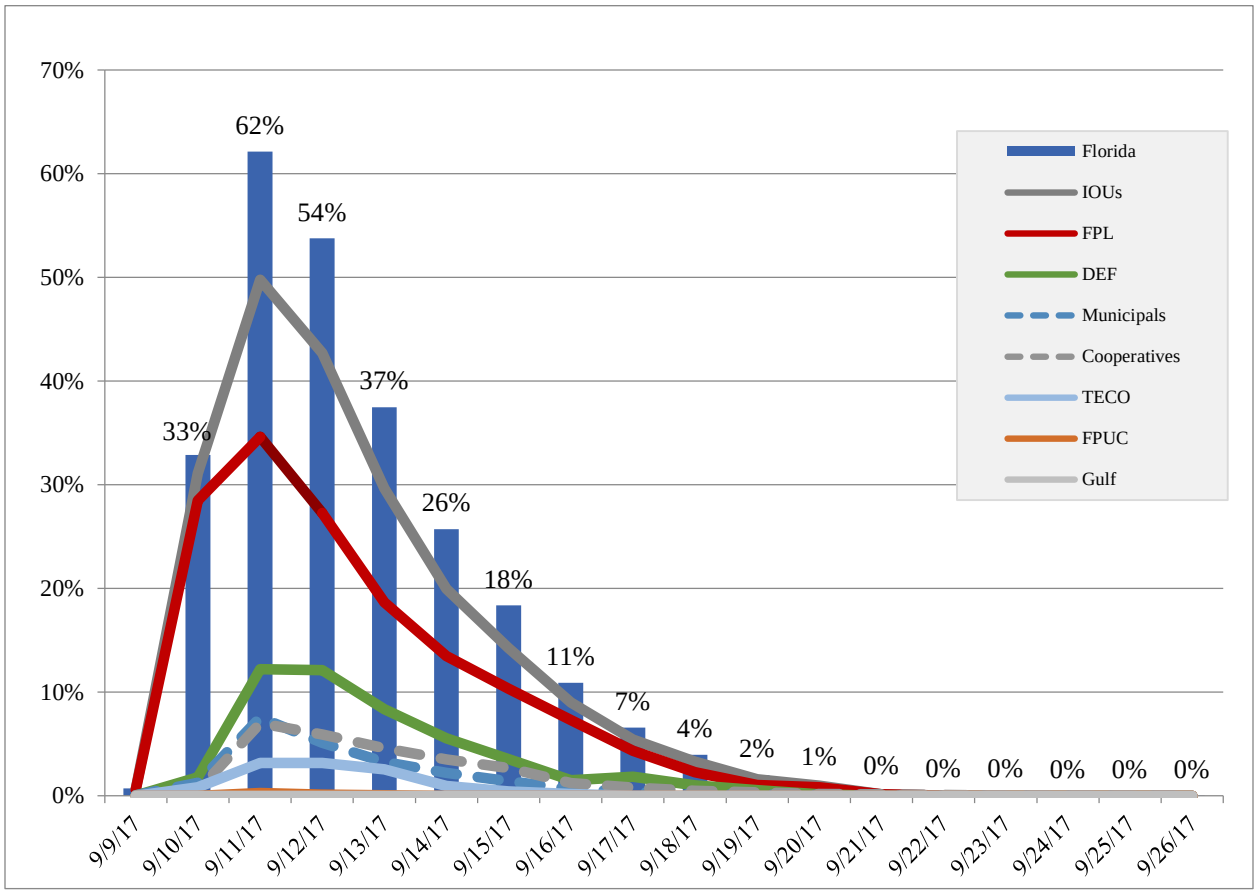
Hurricane Irma Restoration

Florida's utilities managed more than 27,000 crews in the aftermath of Hurricane Irma. The rate of restoration was fairly rapid, 50 percent of customers restored in one day, with comparable results for all utilities.

Using outage data reported to the Florida Division of Emergency Management (DEM), Figure 4-1 provides the number of customer accounts without power in proportion to the total state caused by Hurricane Irma.

The peak outages occurred on September 11, 2017, with approximately 62 percent of all customers in the state without power. Five days following this peak, the number of outages dropped to approximately 11 percent. On September 20, 2017, 10 days following the outage peak, the percent of customer accounts without power dropped below 1 percent.

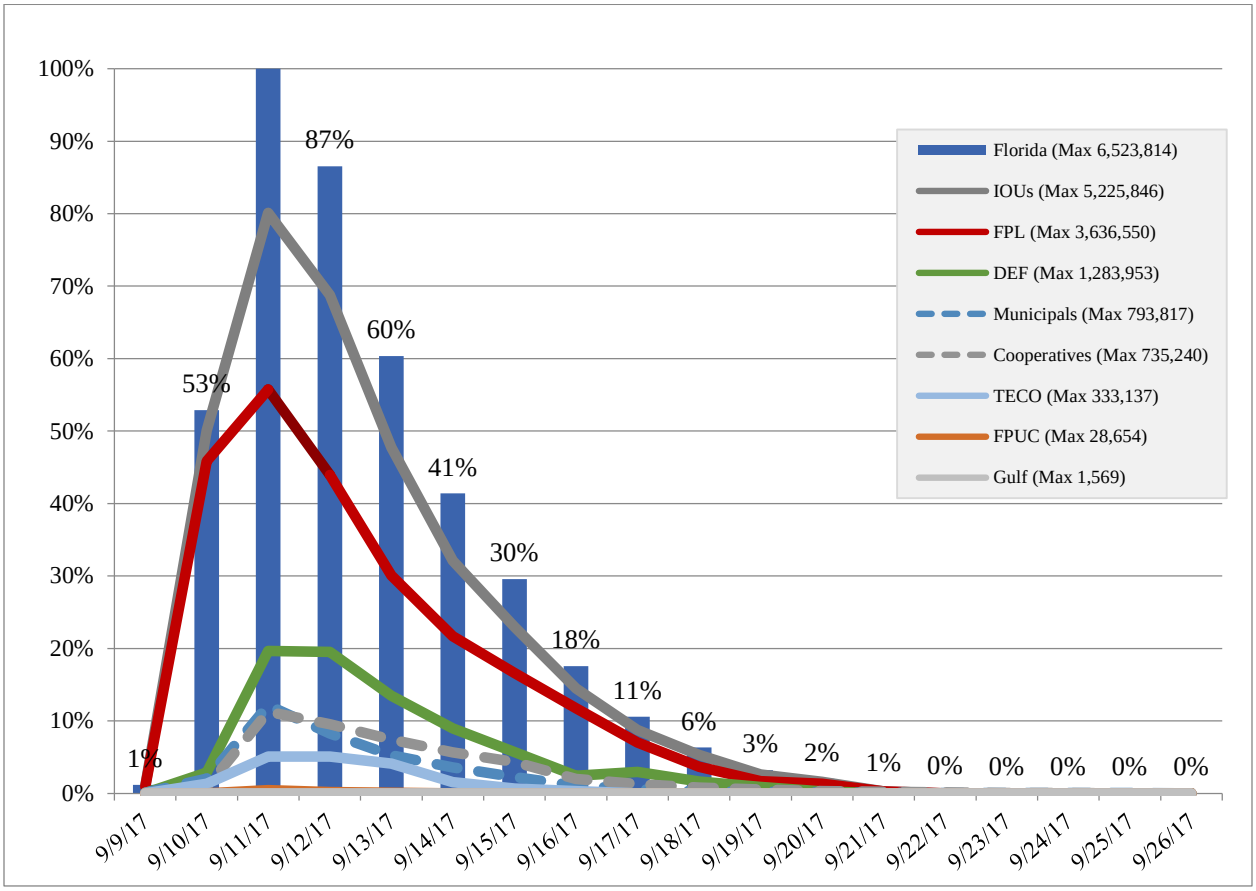
Figure 4-1.
Hurricane Irma – Daily Maximum Percent of Florida's Customers without Power



Source: State EOC power outage reports.
Note: Individual utility outage maximums occurred at different times and do not add to the total.

Figure 4-2 provides the affected customers that were without power from Hurricane Irma. Following the peak outages on September 11, the proportion of affected customers without power was below 50 percent by September 14. By September 20 the number of customers without power dropped to 2 percent. For several utilities, once the number of customers without power dropped to 2 percent or less, the utility stopped reporting outages to the DEM as these outages could be unrelated to the storm event.

Figure 4-2.
Hurricane Irma – Daily Maximum Percent of Affected Customers without Power



Source: State EOC power outage reports.
Note: Individual utility outage maximums occurred at different times and do not add to the total.

Overall, Figures 4-1 and 4-2 illustrate that the graphs for IOUs are similar in shape to the Municipals and Cooperatives, demonstrating comparable power restoration achievements for the different utility groups. No irregularities were observed in the data.

During the May 2018 workshop, FPL provided a comparison of outage data and restoration times for Hurricanes Wilma and Irma. As seen in Table 4-1, it took one day to restore power to

50 percent of FPL's customers for Hurricane Irma, while FPL reported it took five days for Hurricane Wilma. Restoring all customers took 10 days after Hurricane Irma, and it took 18 days after Hurricane Wilma.

Also at the workshop, TECO provided a comparison of time to complete restoration after Hurricanes Irma (7 days) and Jeanne (11 days).

No other utility provided a similar comparison. While each storm is different and presents its own set of difficulties, the data show restoration times have decreased markedly compared to previous storms.

Table 4-1.
FPL – Outage and Restoration Data for Hurricanes Wilma and Irma

	Wilma	Irma
Customer outages	3.2M	4.4M
Staging sites	20	29
% Restored / days	50% / 5	50% / 1
All restored (days)	18	10
Avg. days to restore	5.4	2.1

Source: FPL's presentation at the May 2, 2018, Commission Workshop.

Outage Causes

Data collected from 39 utilities identified that the biggest source of outages was vegetation issues. Many utilities described that these issues were from fallen trees or branches that were outside of the utilities' rights of way. Additional trimming by the utilities within their rights of way would not eliminate these vegetation related outages. It should also be noted that typical hardening projects are designed and constructed to withstand extreme wind loads, not fallen trees.

The second most prevalent outage cause was from embedded severe weather events, such as tornadoes, microbursts, and flooding.

Mutual Aid

Many mutual aid agreements among IOUs throughout the country are managed by seven Regional Mutual Assistance Groups (RMAGs). Florida's IOUs are members of the Southeastern Electric Exchange RMAG. RMAGs facilitate the process of identifying available restoration workers and help coordinate the logistics to help with restoration efforts.

IOUs that are in RMAGs follow guidelines established by the Edison Electric Institute (EEI), and also establish additional guidelines that aid in the communication process and rapid mobilization and response efforts.

If needed, utilities in one RMAG will assist those in another region.[5] EEI also communicates regularly with the associations that serve Municipals and Cooperatives during major outage incidents, providing a process for electric companies to request support from other electric companies that have not been affected by major outage events.[6]

Section 252.40, F.S., Mutual Aid Arrangements, authorizes the governing body of each political subdivision of the state, "to develop and enter into mutual aid agreements within the state for reciprocal emergency aid and assistance in case of emergencies too extensive to be dealt with unassisted." It also provides that, "[s]uch agreements shall be consistent with the state comprehensive emergency management plan and program, and in time of emergency it shall be the duty of each local emergency management agency to render assistance in accordance with the provisions of such mutual aid agreements to the fullest possible extent."

The American Public Power Association (APPA), together with state and regional public power utilities and organizations, coordinate the mutual aid network for the nation's public power utilities. These utilities have local, state, and regional contracts and agreements for mutual aid, and there is a national mutual aid agreement with over 2,000 public power and rural electric cooperatives so they are able to assist one another when needed.

In addition to helping public power utilities in need, public power utilities also provide mutual aid to cooperatives and to IOUs when requested and have also received assistance from cooperatives and IOUs when needed. Mutual aid played a key role in restoring the power quickly after Hurricane Irma. Public power utilities and IOUs aided one another in the restoration efforts.[7]

Prior to Hurricane Irma making landfall, many utilities made requests for mutual aid. Based on information from the state EOC, a total of 49 utilities received mutual aid. Information on the number of crew managers and crews managed, which includes both utility and mutual aid crews, was requested from utilities.

Table 4-2 illustrates the large number of crews that were managed by a limited number of experienced managers. From the 47 utilities that responded to staff's data request, the average experience level of the crew managers was 25 years. This demonstrates the level of expertise that is required to coordinate large recovery efforts, particularly in regard to mutual aid crews that are unfamiliar with local terrain, the transmission and distribution systems, and procedures specific to each utility.

Considering the large number of mutual aid crews that were brought in to assist with power restoration, the number of injuries was low and there were no fatalities. Of the total 103 injuries, 38 were reported for utility personnel and 65 were reported for mutual aid personnel.

[5] Miles Keogh and Sharon Thomas, NARUC Grants and Research, *Regional Mutual Assistance Groups: A Primer* (November 2015).
[6] Edison Electric Institute, *Understanding the Electric Power Industry's Response and Restoration Process* (October 2016).
[7] APPA letter to U.S. House Energy & Commerce Committee, Subcommittee on Energy (November 1, 2017).

Table 4-2.
Hurricane Irma – Utility Coordination, Injuries, and Fatalities

	Managers	Crews Managed	Meals	Injuries	Fatalities
IOU	48	22,398	1,409,352	76	0
Municipals	96	1,935	109,266	13	0
Cooperatives	104	3,295	171,803	14	0
Total	248	27,628	1,690,421	103	0

Impediments to Restoration

Data was collected from 39 utilities on the primary impediments that were identified for Hurricane Irma. Consistent with prior hurricanes, the biggest impediment to restoration was clearing vegetation, much of which was debris from fallen trees or branches that were outside of the utilities' rights of way.

Other impediments to restoration unique to Hurricane Irma were roadway congestion and lack of motor fuel availability due to the size and scale of evacuations. Therefore, utility crews that were tasked to aid in power restoration for various areas were delayed by some fuel shortages and traffic congestion on the roadways.

Storm Restoration Cost Recovery

Storm hardening costs (Section II), incurred to generally make the system less vulnerable, are covered by the rates the utility is authorized to charge. Storm restoration costs, incurred in response to a specific storm, are addressed differently and are not covered by normal rates.

Following Hurricane Andrew in 1992, which radically changed the availability and cost of commercial insurance, IOUs requested that the Commission allow for alternative risk mitigation for storm damage. The Commission considered various forms of storm cost risk mitigation for the IOUs and settled on a three part approach:

- A storm damage reserve
- An annual storm accrual
- A provision to seek recovery of costs that exceed the storm damage reserve balance

Under the three-part system, cost recovery of storm related damage is typically addressed through a storm damage reserve, a surcharge, or a combination of the two.

The annual accrual spreads cost over a long period to build a reserve dedicated to storm expenses. Once the storm reserve reaches a target value, the accrual can be suspended. The reserve alleviates consumer rate shock, either by entirely absorbing the cost of lesser storm damage, or at least diminishing the cost impact of major storms that may exceed the reserve

balance. When the reserve is depleted, typically it is replenished through a small amount added to monthly bills.

In order to define what type of costs can be recovered, the Commission adopted Rule 25-6.0143, F.A.C., which specifies that only incremental costs – those above the normal costs that are covered by rates – can be charged to the storm reserve or recovered in a storm cost recovery proceeding. The largest incremental storm cost categories typically include repair materials, added payroll/overtime, contracted crews, travel, housing, and food.

As outlined in recent settlement agreements, in the event that the storm reserve is depleted from a major storm or multiple storms, or if a utility does not have a storm reserve, an IOU can request an interim storm surcharge, added to rates for a specific period based on an estimate, pending a thorough accounting.

The Commission dockets the matter for a formal process to determine actual eligible costs when they are available.

Revenues collected with the interim storm charge are then compared to the total actual amount of storm restoration costs determined to be eligible. Expenses that exceed what the interim charge generated are recovered in rates, or excess interim charge revenues are flowed back to customers.

Section V: Storm Hardening Performance

Analyzing infrastructure performance is inherently problematic because conditions vary widely among storms, and among different times and locations within the same storm. However, Hurricane Irma's very large footprint, which spread extreme weather conditions across multiple IOUs' service territories throughout the Florida peninsula, provided a very large sample that tends to offset those variables. This section focuses on Hurricane Irma outcomes.

Although the sample was large, data collection was limited due to urgency and tumultuous conditions during storm restoration. With a decade having passed since the Commission's 2006 storm order, the IOUs report they were focused on restoring service as rapidly as possible and it was not feasible to collect data as called for in the order. In part, the performance data had to be reconstructed after the fact, not all the contemplated data is available, and much of it is based on differing methodologies and sometimes not comparable among utilities.

The 2016-2017 experience suggests the next step is more complete and standardized data collection in future storms, which will allow a deeper analysis of the circumstances under which hardening and undergrounding are most beneficial. However, the Hurricane Irma data provides a broad performance comparison of non-hardened overhead, hardened overhead, and underground facilities.

Outage Performance

FPL, the state's largest utility, was able to report outage rates of Irma-impacted facilities broken out by non-hardened, hardened, and underground facilities. The results showed across its system hardening overhead lines resulted in fewer outages, and underground lines suffered minimal outages.

Transmission
20% Overhead, non-hardened
16% Hardened overhead
0% Underground

Feeders
82% Overhead, non-hardened
69% Hardened overhead
18% Underground

Laterals
24% Overhead (not specified)
4% Underground

Source: Second Supplemental Amended Response, Staff First Data Request, No. 29, dated 4/25/18

Infrastructure performance

Hardening overhead facilities also resulted in lower rates of pole failure, and failure rates of underground facilities were even lower, across all three of Florida's largest IOUs. (Gulf Power Company's territory was not materially affected by Hurricane Irma, and FPUC's territory would provide a very small data sample.) Note that poles are the unit of measurement for non-hardened vs hardened overhead data, while overhead vs. underground figures are miles of circuit.

Florida Power & Light

Non-hardened vs hardened overhead
Transmission poles

	Poles total	Replaced/repaired
Overhead, non-hardened	5,991	5
Hardened overhead	60,694	0

Non-hardened vs hardened overhead
Distribution poles

	Poles total	Replaced/repaired
Overhead, non-hardened	1,063,684	2,834
Hardened overhead	124,518	26

Overhead vs underground
Transmission circuits in miles

	Total miles	Replaced/repaired
Overhead	6,857	0.1
Underground	105	0

Overhead vs underground
Distribution circuits in miles

	Total miles	Replaced/repaired
Overhead	42,301	443.0
Underground	25,818	12.5

Source: FPL worksheets dated 4/27/18

Duke Energy Florida

Non-hardened vs hardened overhead
Transmission poles

	Poles total	Replaced/repaired
Overhead, non-hardened	21,285	139
Hardened overhead	29,499	0

Non-hardened vs hardened overhead
Distribution poles

No data available.

Overhead vs underground
Transmission circuits in miles

	Total miles	Replaced/repaired
Overhead	5,139	0
Underground	69.83	0

Overhead vs underground
Distribution circuits in miles

	Total miles	Replaced/repaired
Overhead	17,993	324.0
Underground	14,140	4.3

Source: Duke worksheets filed 4/27/18

Tampa Electric

Non-hardened vs hardened overhead
Transmission poles

	Poles total	Replaced/repaired
Overhead, non-hardened	5,834	15
Hardened overhead	19,447	2

Non-hardened vs hardened overhead
Distribution poles

	Poles total	Replaced/repaired
Overhead, non-hardened	199,880	145
Hardened overhead	63,120	20

Overhead vs underground
Transmission circuits in miles

	Total miles	Replaced/repaired
Overhead	5,307	0
Underground	27	0

Overhead vs underground
Distribution circuits in miles

	Total miles	Replaced/repaired
Overhead	19,104	24.8
Underground	7,915	0.1

Source: TECO worksheets filed 4/25/18

It should be noted that while underground facilities fared particularly well during Hurricane Irma, they also are susceptible. The damage may be caused by uprooted trees and flooding, and the repairs to such facilities typically take longer to complete

Forensic Analysis

As part of their storm hardening plans, as required by the 2006 order, IOUs conduct post-storm forensic analyses which review storm-related data and assess damaged facilities that did not perform as designed. Following a review of the storm damage data, which typically takes several months, a report is issued outlining the findings of the review.

For Hurricane Irma, FPL, DEF, and TECO completed a forensic analysis to evaluate the performance of their facilities during the storm. GPC and FPUC indicated that forensic analyses were not completed due to a lack of significant damage or determined that all damage was caused by vegetation.

DEF provided five forensic analysis reports related to failures of wooden distribution poles, wooden transmission poles, and a transmission tower. In the forensic report on the steel transmission tower that fell during Hurricane Irma, the failure was identified as corrosion at the base of the tower. DEF's forensic reports also identified 27 wooden transmission pole failures due to high winds, with wood rot contributing to some of the failures.

FPL provided a post-storm forensic review for Hurricane Irma, which identified five wooden transmission pole failures caused by wind only.

TECO's forensic analysis identified three leaning structures following Hurricane Irma, and at the workshop, TECO reported that it had ten transmission structure failures.

Section VI: Customer Communication

Public preparedness is critical during natural disasters. The utilities and the Commission provide information to consumers regarding storm preparedness, such as hurricane survival kits, portable generator safety, and ways to prepare a home before a storm.

Following a storm, customers are provided various methods to communicate with utilities. Customers can report a power outage to the utility through various means such as interactive voice response systems, customer call centers, the utility's website, mobile applications, and the PSC.

Communication issues were a notable source of customer dissatisfaction during Hurricane Irma. Customers particularly complained of inaccurate restoration projections and unavailability of overwhelmed utility websites and apps.

A total of 41 utilities provided data on the number of customer representatives that were utilized during Hurricanes Hermine, Matthew, Irma, and Nate. This information is summarized in Table 5-1, which includes third-party representatives.

Table 5-1.
Total Number of Utility and Third-Party Customer Contact Representatives

	Hermine	Matthew	Irma	Nate
IOUs	948	1,825	2,418	106
Municipals	300	571	1,059	48
Cooperatives	163	84	297	6
Total	1,411	2,480	3,774	160

Source: Utilities' responses to staff's first data request, No. 14.

Table 5-2 provides the number of customer contacts for Hurricanes Hermine, Matthew, Irma, and Nate. Customer contacts may include various forms of communication, including phone, email, mobile application, utility website, and social media.

Table 5-2.
Total Customer Contacts

	Hermine	Matthew	Irma	Nate
IOUs	395,358	3,605,174	11,424,246	30,545
Municipals	71,302	414,202	1,634,438	0
Cooperatives	53,804	12,053	207,488	343
Total	520,464	4,031,429	13,266,172	30,888

Source: Utilities' responses to staff's first data request, No. 15.

Table 5-3 provides the average number of customer contacts that were handled by each utility and third-party customer contact representatives. For Hurricane Irma, an average number of 2,513 customer contacts per representative, which demonstrates the large scale of communication that occurred between customers and the electric utilities.

Table 5-3.
Average Number of Customer Contacts per Utility Representative[8]

	Hermine	Matthew	Irma	Nate
IOUs	628	1,776	2,513	332
Municipals	138	774	1,061	0
Cooperatives	439	84	796	57

Source: Utilities' responses to staff's first data request, Nos. 14 and 15.

Public Comments to the PSC

Following the establishment of Docket No. 20170215-EU, a customer portal was opened on the Commission's website on October 9, 2017, allowing customers to submit comments regarding their reaction to utility restoration/communication efforts.

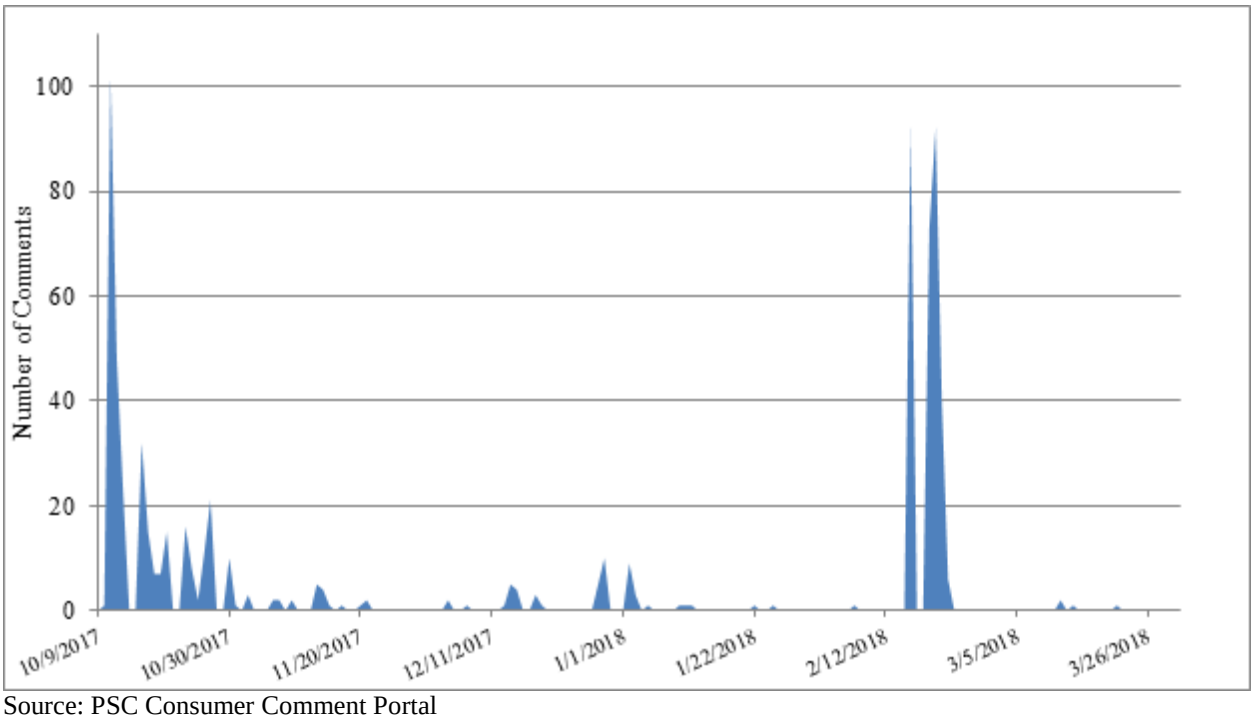
The portal provided consumers four categories to select from, as well as the option to submit written comments, where consumers could address any specific concerns. The four categories that consumers could select from were:

- Power restoration time.
- Information provided by electric utility provider prior to the storm.
- Information provided by electric utility provider after the storm.
- Other.

[8] It should be noted that this average includes only utilities that were affected by a storm.

Figure 5-1 provides a timeline of the number of comments received through the PSC Consumer Comment Portal.

Figure 5-1.
PSC Portal – Timeline of Consumer Comments Received



Source: PSC Consumer Comment Portal

For the month of October the PSC received 319 comments, which mostly related to consumers' experiences and feedback during Hurricane Irma. Comments focused on frustration with timely communication, inaccurate estimated restoration times, and tree trimming.

Comments decreased after October, but there was a small swell of comments from December 28, 2017, to January 12, 2018, when consumers expressed concerns about the potential addition of a surcharge to customer bills as a result of the hurricane.

From February 16 to February 22, 2018, a total of 303 comments were received, which were predominantly focused on supporting and encouraging the use of distributed solar generation. The portal was closed on May 1, 2018, with a total of 701 public comments received.

Staff collected and sorted the comments by category and divided them into subcategories based on whether the comment was negative, positive, or neutral. Table 5-4 provides a summary of the comments that were received.

Table 5-4.
PSC Portal – Customer Comments

Category	Comments
Power Restoration Time	345
Information Provided Prior to the Storm	14
Information Provided After the Storm	69
Other	273
Total	701
Positive vs. Negative Comments	
Negative Comments on Electric Utility	346
Positive Comments on Electric Utility	74
Not Expressed	281
Total	701

Source: PSC Consumer Comments Portal

Table 5-5 provides the number of comments received for IOUs, Municipals and Cooperatives. Two of the customer comments did not provide the names of their electric utilities.

Table 5-5.
PSC Portal – Customer Comments by Utility Type

Utility Type	Comments
Investor Owned Electric Utility	616
Municipal Electric Utility	48
Cooperative Electric Utility	35
Not Specified	2
Total	701

Source: PSC Consumer Comments Portal

The most prevalent topics were related to supporting and encouraging the use of distributed solar generation, cost responsibility for restoration, frustration with communication, tree trimming, and effectiveness of storm hardening.

Table 5-6 provides the number of comments that were received for each of these topics.

Table 5-6.
PSC Portal – Most Prevalent Topics Discussed in Customer Comments

Subcategory	Comments	Percent of Total
Support and encouragement of solar	258	37%
Cost responsibility for restoration	105	15%
Frustration with timely communications	84	12%
Tree trimming	73	10%
Effectiveness of hardening	60	9%

Despite the wide-spread impact of Hurricane Irma on the state and the number of customers that were affected, the number of comments the Commission received was nominal.

Stakeholder Comments to the PSC

In addition to comments from utilities and customers, staff also solicited comments from non-utility stakeholders, which included Associated Industries of Florida, the Florida Chamber of Commerce, Florida Association of Counties, and Florida League of Cities. Appendix A provides a summary of the stakeholder comments that the Commission received.

A total of 14 stakeholders provided comments on the topics of vegetation management, undergrounding, and coordination and communications.

For vegetation management, the comments mainly focused on improving communication between stakeholders and utilities on where and when tree trimming occurs, as well as better educating the public on tree trimming.

While the comments on undergrounding varied, many voiced a positive position on undergrounding, though stakeholders expressed differences in opinion on cost responsibility.

Last, the comments on coordination and communication largely concentrated on more involvement from utilities at local EOCs, in addition to improving post-event information and power restoration time estimates.

Aside from the suggested areas of improvement mentioned, the overall comments that stakeholders provided were positive.

B. Original Packet

State of Florida
Public Service Commission
INTERNAL AFFAIRS AGENDA
Tuesday – June 19, 2018
9:30 A.M.
Room 105 - Gerald L. Gunter Building

1. Review of Electric Utility Hurricane Preparedness and Restoration Actions – Draft Report and Recommended Actions. (Attachment 1)

2. General Counsel's Report

3. Executive Director's Report

4. Other Matters

BB/aml

OUTSIDE PERSONS WISHING TO ADDRESS THE COMMISSION ON ANY OF THE AGENDAED ITEMS SHOULD CONTACT THE OFFICE OF THE EXECUTIVE DIRECTOR AT (850) 413-6463.

Attachment 1

State of Florida

Public Service Commission

CAPITAL CIRCLE OFFICE CENTER • 2540 SHUMARD OAK BOULEVARD
TALLAHASSEE, FLORIDA 32399-0850

-M-E-M-O-R-A-N-D-U-M-

DATE: June 8, 2018

TO: Braulio L. Baez, Executive Director

FROM: Division of Engineering (E. Knoblauch, P. Buys, T. Thompson)
Office of Industry Development & Market Analysis (J. Breman)
Office of Consumer Assistance & Outreach (R. Hicks)
Office of the General Counsel (R. Gervasi, R. Dziechciarz)

RE: Docket No. 20170215-EU - Review of Electric Utility Hurricane Preparedness and Restoration Actions.

CRITICAL INFORMATION: ACTION IS NEEDED - Please place on the June 19, 2018 Internal Affairs. Commission approval of draft report and recommended future actions is sought.

On October 3, 2017, the Commission opened Docket No. 20170215-EU to review the hurricane preparedness and restoration actions of Florida's electric utilities. The purpose of the review was to identify potential areas where infrastructure damage, outages, and restoration time for customers could be minimized in the future. Commission staff issued several data requests to all electric utilities and sought input from customers and non-utility stakeholders. On May 2-3, 2018, the Commission held a workshop to further explore the preparedness and restoration actions of Florida's electric utilities. A review of the information received and conclusions are included in the attached draft report. Staff is seeking approval of the report and to close Docket No. 20170215-EU.

Based on the review and conclusions contained in the attached report, staff also recommends the Commission initiate the following actions which are discussed in more detail below.

Recommended Action

Open storm hardening plan[1] review dockets for all investor-owned utilities (IOUs) and direct staff to gather the following information:

- A listing and summary of meetings with local governments regarding tree trimming and the identification of critical facilities.
- A description of the IOU's staffing practices for local emergency operations centers during a major storm event.
- A description of how each utility prepares for and responds to roadway congestion and fuel availability issues.
- A comparison of all viable alternatives considered before selecting each proposed project identified in the next storm hardening plan filings.

Utilities reported that they have regular meetings with local governments regarding tree trimming and identification of critical facilities. However, the utilities, local government representatives, and the Office of Public Counsel agreed at that communication among all affected parties could be improved. During the workshop, some local government representatives expressed a desire for additional utility staffing at local emergency operations centers.

Consistent with prior hurricanes, a major impediment towards restoration was fallen trees or branches that were outside of the utilities' rights of way. Other impediments to restoration unique to Hurricane Irma were roadway congestion and lack of motor fuel availability due to the size and scale of evacuations. IOUs should take these issues into consideration when reviewing their storm hardening plan.

Staff requested data from the IOUs on the performance of hardened and non-hardened facilities. Utilities responded that this information was not tracked in the days following Hurricane Irma as they were intent on restoring power as quickly as possible. However, some performance data for hardened and non-hardened facilities was presented at the workshop, which showed that the storm hardening efforts by the Commission and utilities appear to be working.

Approval of an IOU's storm hardening plan does not equate to approval for cost recovery. During a general rate case, the costs for storm hardening are taken into consideration and the utility has the burden of proof to show that the costs are prudent for cost recovery. However, recent rate case proceedings have resulted in settlement agreements between the parties, and the storm hardening costs are not specifically identified in the settlement agreements. In order to enhance the review process related to storm hardening activities, a comparison of all viable alternatives considered by the IOUs should be provided before selecting proposed hardening projects. By reviewing such comparisons, the Commission can ensure that storm hardening is being pursued in a cost-efficient manner. For example, a utility should be able to explain why a proposed underground project is preferable to a hardened overhead project or additional smart grid investment, etc.

[1] On February 1, 2007, the Commission adopted Rule 25-6.0342, F.A.C., to require IOUs to update their storm hardening plans every 3 years, and codified the contents to be included in each plan. The next update is currently scheduled to be filed in 2019.

Recommended Action

Direct staff to initiate management audits to:

- Examine the procedures and processes used by the IOUs to estimate and disseminate outage restoration times following a major storm.
- Examine the procedures and processes used by the IOUs to inspect and schedule maintenance on transmission structures.

Many customer comments that were submitted expressed frustration with inaccurate power restoration estimates. Some local government representatives also expressed similar concerns. While this did not appear to hinder actual restoration, customers were upset based on their expectations.

As part of their storm hardening plans, IOUs conduct post-storm forensic analyses which include a review of storm-related data and an assessment of damaged facilities that did not perform as designed. Despite regular inspection requirements, post-storm forensic reports identified corrosion and/or wood rot as a contributing factor to the failure of some Duke Energy Florida, LLC transmission towers. Post-storm analyses provided by Florida Power & Light Company reported five wooden transmission pole failures and Tampa Electric Company reported ten wooden transmission pole failures.

A more thorough examination of the procedures and processes used by the IOUs to estimate and disseminate outage restoration times following a major storm and the inspection and maintenance of transmission structures may identify areas of improvement in the future.

Observations for Consideration

Proactive tree trimming has been a key initiative of the Commission, and the results of the review indicate that vegetation continues to be a primary cause of damage and outages. Entities with authority over tree trimming policies should carefully consider options that would enhance the ability of electric utilities to conduct vegetation management within the public road rights-of-ways and easements in order to further reduce outages and restoration costs. Expanding the ability of electric utilities to work with local communities and private land-owners to conduct tree trimming and problem tree removal on private property should also provide additional benefits.

EK:pz

Attachment

cc: Office of the General Counsel (K. Hetrick)
Deputy Executive Director, Technical (M. Futrell)
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Review of Florida's Electric Utility Hurricane Preparedness and Restoration Actions 2018

June 2018

State of Florida
Florida Public Service Commission
Division of Engineering

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Terms and Acronyms

APPA	American Public Power Association
CIAC	Contributions-in-Aid-of-Construction
Cooperative	Rural Electric Cooperative Utility
DEF	Duke Energy Florida, LLC
DEM	Florida Department of Emergency Management
EEI	Edison Electric Group
EOC	Emergency Operation Center
ESF-12	Emergency Support Function 12
F.A.C.	Florida Administrative Code
FECA	Florida Electric Cooperatives Association, Inc.
FEMA	Federal Emergency Management Agency
FIPUG	Florida Industrial Power Users Group
FMEA	Florida Municipal Electric Association
FPL	Florida Power & Light Company
FPUC	Florida Public Utilities Company
FRF	Florida Retail Federation
F.S.	Florida Statutes
GIS	Geographic information system
GPC	Gulf Power Company
IOUs	The five investor-owned electric utilities: DEF, FPL, TECO, GPC, and FPUC
Municipal	Municipal Electric Utility
OPC	Office of Public Counsel
PURC	Public Utility Research Center – University of Florida
RMAG	Regional Mutual Assistance Groups
TECO	Tampa Electric Company

Executive Summary

The Florida Public Service Commission (PSC or Commission) has broad authority over the adequacy and reliability of the state's electric transmission and distribution grids. In exercising its authority, the Commission has taken action in a variety of forms:

- Rules on construction standards for electric transmission and distribution facilities.
- Rules on safe construction of electric transmission and distribution facilities.
- Rules pertaining to customer charges for underground facilities.
- Prudence reviews of hurricane restoration costs.
- Annual review of transmission and distribution service reliability.

The Commission's authority over investor-owned electric utilities (IOUs) is comprehensive and includes setting rates and all cost-recovery matters. While the Commission does not have authority to set rates for municipal electric utilities (Municipals) and rural electric cooperative utilities (Cooperatives), the Commission has authority over all electric utilities to:

- Prescribe uniform systems and classifications of accounts.
- Evaluate rate structure to ensure no undue discrimination between customer classes.[1]
- Require electric power conservation and reliability within a coordinated grid for operational as well as emergency purposes.
- Inspect new electrical utility facility construction using the National Electrical Safety Code of 2007 as the minimum standard.
- Approve territorial agreements between and among rural electric cooperatives, municipal electric utilities, and other electric utilities under its jurisdiction; and to resolve any territorial dispute.
- Require reports as deemed necessary.

The Commission first initiated rules on standards of construction for electric transmission and distribution facilities in 1969. These initial standards of construction were simply a broad statement promoting continuity and uniformity in the quality of service. In 1987, pursuant to Section 366.04(6), Florida Statutes (F.S.), the Commission adopted rules establishing safety standards for new transmission and distribution facilities. In 1992, the Commission established rules governing utility calculations of charges for the conversion of existing overhead electric distribution facilities to underground. In 1993, the Commission required utilities to file annual service reliability reports. Subsequent to Hurricane Andrew in 1992, the Commission implemented measures providing for self-insurance of transmission and distribution facilities because cost-effective commercial insurance offerings were no longer available.

[1] Rate structure refers to the classification system used in justifying different rates and, more specifically, to the rate relationship between various customer classes, as well as the rate relationship between members of a customer class. See Rule 25-9.051(7), Florida Administrative Code. https://www.flrules.org/gateway/RuleNo.asp?ID=25-9.051

Following the 2004 and 2005 hurricane seasons, to promote strengthening of Florida's electric infrastructure, the Commission adopted several storm hardening initiatives to reduce outages while mitigating excessive cost increases, including wooden pole inspection and replacement programs. The Commission also adopted rules to promote the undergrounding of electric facilities.

During the 2016 and 2017 hurricane seasons, Florida was impacted by four hurricanes. On October 3, 2017, the Commission opened Docket No. 20170215-EU to review the hurricane preparedness and restoration actions of Florida's electric utilities. The purpose of the review was to identify potential areas where infrastructure damage, outages, and recovery time for customers could be minimized in the future. Commission staff issued several data requests to all utilities and sought input from non-utility stakeholders and customers.

On October 9, 2017, a customer portal was opened on the Commission's website, allowing customers to submit comments regarding their reaction to utility restoration/communication efforts. The portal was closed on May 1, 2018, with 701 comments received. Initially, customers voiced frustrations with inaccurate power restoration estimates and cost responsibility for restoration while more recent comments from customers focused on support for additional distributed solar generation. Additional comments filed by stakeholders, such as local governments, also voiced a desire for improved pre-storm and post-storm information. Stakeholders also expressed a need to improve communication with utilities on where and when tree trimming occurs, as well as better education of the public on tree trimming. Increased involvement from utilities at local Emergency Operations Center (EOCs) was another area where stakeholders concentrated their comments.

On May 2-3, 2018, the Commission held a workshop to further explore the preparedness and restoration actions of Florida's electric utilities. At the workshop the utilities offered suggested improvements such as targeted undergrounding projects for certain lateral circuits, possible legislation to require inspections and hardening of non-electric utility wooden poles, and additional coordination and communication regarding vegetation outside of the utilities' rights of way. As mentioned above, participating stakeholders also suggested improvements on increased coordination with utilities, local governments, and customers. The information received and the findings presented in this report are summarized below.

In preparation for hurricane season, Florida's utilities, as well as Commission staff, participate in an annual hurricane exercise at the State's EOC. Utilities also participate in hurricane preparedness exercises and meetings with local governments to ensure that the proper critical facilities such as hospitals are identified. Florida's IOUs prioritize the hardening of infrastructure that serves these facilities which are generally restored first following a storm event.

In the event of a hurricane, utilities initiate pre-storm activities, such as requesting mutual aid, as early as 240 hours before landfall. Following the completion of post-storm damage assessment, utilities work to return service to the largest number of customers in the shortest amount of time

with prioritization given to critical facilities. Based on a review of the utility presented data for each hurricane, no abnormalities were identified between storms for the restoration process.

Florida's utilities managed more than 27,000 crews during their restoration efforts following Hurricane Irma. The rate of restoration was fairly rapid, 50 percent of customers restored in one day, and comparable for all utilities. Consistent with prior hurricanes, the biggest impediment to restoration was vegetation clearing, many from fallen trees or branches that were outside of the utilities' rights of way. Other impediments to restoration unique to Hurricane Irma were roadway congestion and motor fuel availability due to the size and scale of evacuations. At the May 2018 workshop, all of the IOUs also provided data that hardened facilities generally performed better than non-hardened facilities. The IOUs also indicated that there were fewer outages for underground than overhead circuits. Based on the information gathered, storm hardening efforts by the Commission and utilities appear to be working.

Generally, transmission infrastructure appears to have performed as designed. Despite regular inspection procedures, post storm forensic reports identified corrosion on one steel tower and wood rot as a contributing factor to the failure of some Duke Energy Florida, LLC (DEF) transmission towers. Post storm analyses provided by Florida Power & Light Company (FPL) and Tampa Electric Company (TECO) also reported five and ten wooden transmission pole failures, respectively.

All Floridians should maintain a high level of storm preparedness. During restoration efforts, customers can also assist in the overall speed of restoration by limiting travel unless it is an emergency situation. Following a storm, customers can report a power outage to the utility through various means such as interactive voice response systems, customer call centers, the utility's website, and mobile applications. Florida's utilities used more than 3,500 customer contact representatives during Hurricane Irma and received more than 13 million customer contacts in relation to the hurricane. While post storm communication was not an impediment to restoration, customers expressed frustration with not getting timely and accurate restoration updates.

The review of information gathered throughout the course of this docket indicates that the efforts of the Commission and Florida's utilities since 2007 have improved the resilience of the electric system. Areas of further improvement, such as additional communication with stakeholders, have also been identified that can be addressed by the Commission in the future. As discussed, the on-going activities of Florida's utilities should balance the need to strengthen electric infrastructure and improve restoration time, while mitigating excessive cost increases to customers.

Section I: Background

In response to the large impact that the 2004 and 2005 hurricanes had on the state, the 2006 Florida Legislature directed the Commission to ". . . conduct a review to determine what should be done to enhance the reliability of Florida's transmission and distribution grids during extreme weather events, including the strengthening of distribution and transmission facilities." Based on its review of the 2004 and 2005 hurricane seasons, the Commission provided three recommendations in a 2007 report to the Legislature.[2] The recommendations were for Florida to: (1) maintain a high level of storm preparedness (2) strengthen the electric infrastructure to withstand severe weather events with the use of hardening activities; and (3) establish additional planning tools to identify and implement instances where undergrounding is appropriate as a means of storm hardening. As discussed in the 2007 report to the Florida Legislature, ". . . the Commission has been careful to balance the need to strengthen the state's electric infrastructure to minimize storm damage, reduce outages, and reduce restoration time while mitigating excessive cost increases to electric customers."

Storm preparedness also extends to educating the public on the necessary storm provisions they should possess in the event they are without power. The Commission's multi-faceted approach to storm preparedness and promoting the strengthening of electric infrastructure includes storm preparedness workshops, pole inspections, vegetation management, storm hardening plans, and construction standards.

[2] Report to the Legislature on Enhancing the Reliability of Florida's Distribution and Transmission Grids During Extreme Weather, July 2007, http://www.psc.state.fl.us/Files/PDF/Utilities/Electricgas/EnergyInfrastructure/UtilityFilings/docs/stormhardening2007.pdf

Since 2006, the Commission has held annual Hurricane Season Preparation Workshops, which allow the IOUs, Municipals, and Cooperatives to share individual hurricane season preparation activities. To promote the strengthening of Florida's electric infrastructure, the Commission has adopted several storm hardening activities including wooden pole inspection and replacement[3,4] as well as 10 additional storm hardening initiatives.[5] These initiatives were intended to upgrade design, construction, and maintenance practices that allow electric facilities to withstand extreme weather, such as high winds and flooding. The following are the 10 ongoing initiatives for storm preparedness as required by the Commission.

- A Three-Year Vegetation Management Cycle for Distribution Circuits.
- An Audit of Joint-Use Attachment Agreements.
- A Six-Year Transmission Structure Inspection Program.
- Hardening of Existing Transmission Structures.
- A Transmission and Distribution Geographic Information System.
- Post-Storm Data Collection and Forensic Analysis.
- Collection of Detailed Outage Data Differentiating Between the Reliability Performance of Overhead and Underground Systems.
- Increased Utility Coordination with Local Governments.
- Collaborative Research on Effects of Hurricane Winds and Storm Surge.
- A Natural Disaster Preparedness and Recovery Program.

In 2006, the Commission also required Florida's local exchange telecommunications companies to implement an eight-year inspection cycle of their wooden poles.[6] The Commission's authority to impose that requirement was pursuant to Section 364.15, F.S., which was subsequently repealed in 2011 as part of a number of deregulatory changes made to Chapter 364, F.S., at that time. Thus, the Commission no longer has the authority to require inspections of poles owned by telecommunications companies.

The Commission requires all IOUs to file an Annual Distribution Reliability Report with the PSC for review. This report includes updates of utilities' hardening efforts to allow the Commission to monitor progress. Additionally, each IOU updates its tariff as necessary to reflect the Commission requirement that the cost of conversion from overhead to underground, as well as the benefits of storm hardening, be incorporated into the CIAC calculation as outlined in Rules 25-6.0342 and 25-6.064, Florida Administrative Code (F.A.C.).

[3] Order No. PSC-06-0144-PAA-EI, issued February 27, 2006, in Docket No. 20060078-EI, *In re: Proposal to require investor-owned electric utilities to implement ten-year wood pole inspection program.*
[4] Order No. PSC-07-0078-PAA-EU, issued January 29, 2007, in Docket No. 20060531-EU, *In re: Review of all electric utility wooden pole inspection programs.*
[5] Order No. PSC-06-0351-PAA-EI, issued April 25, 2006, in Docket No. 20060198-EI, *In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation cost estimates.*
[6] Order No. PSC-06-0168-PAA-TL, issued March 1, 2006, in Docket No. 20060077-TL, *In re: Proposal to require local exchange telecommunications companies to implement ten-year wood pole inspection program.*

During September and October 2016, Florida was impacted by two hurricanes: Hermine and Matthew. Hurricane Hermine made landfall east of St. Marks on September 2, 2016, while Hurricane Matthew never made landfall in Florida, it remained a few miles off the eastern coastline. In 2017, Hurricanes Irma and Nate impacted Florida. Hurricane Nate did not make landfall in Florida; however, parts of the Gulf coastline felt the effects of the storm. Hurricane Irma made landfall in Florida on September 10, 2016, as a Category 4 hurricane in Monroe County, followed by a second landfall as a Category 3 hurricane in Collier County, providing the first major test to the system since 2005.

On October 3, 2017, the PSC opened Docket No. 20170215-EU to review the hurricane preparedness and restoration actions of Florida's electric utilities. The review was intended to identify potential areas where infrastructure damage, outages, and recovery time for customers could be minimized in the future. In order to identify these areas, Commission staff issued several data requests to all utilities in the areas of preparedness, restoration practices, customer communication, outage causes, facility performance, meteorological data, and suggested improvements.

Commission staff also sought comments from non-utility stakeholders and customers. A summary of the non-utility stakeholders' comments are provided in Appendix A. On October 9, 2017, a customer portal was opened on the Commission website, allowing customers to submit comments. As of May 1, 2018, the Commission received 701 customer comments and 14 comments from non-utility stakeholders.

This report consists of six sections:

Section I: Background

Section II: Review of Hurricane Preparedness

Section III: Summary of 2016 and 2017 Storms

Section IV: Review of Outage Restoration Activities

Section V: Customer Communication

Section VI: Conclusions

Section II: Review of Hurricane Preparedness

Commission Actions

As noted earlier, utilities and their customers must maintain a high level of storm preparedness. In support of sharing individual hurricane preparation activities between IOUs, Municipals, and Cooperatives, the Commission has held annual Hurricane Season Preparation Workshops since 2006. The workshops provide an opportunity for electric utilities to discuss a variety of topics, such as their storm preparedness and restoration processes, coordination with local governments, and public outreach. The Commission's Division of Engineering is responsible for staffing the Emergency Support Function 12 (ESF-12) in the State's EOC. ESF-12 coordinates with the electric and natural gas utilities operating in Florida to ensure the integrity of their energy supply systems are maintained during emergency situations. In this role, Commission staff also participates in an annual hurricane preparedness drill and other EOC related exercises. The Commission provides information to consumers regarding storm preparedness, such as hurricane survival kits, portable generator safety, and ways to prepare your home before a storm. In the event of a storm, links to current Florida Division of Emergency Management information is highlighted on the PSC website (www.floridapsc.com), as well as links to the Federal Emergency Management Agency (FEMA) and the National Hurricane Center, which provides consumers easy access to important resources. The PSC issues statewide news releases at the beginning of each storm season regarding hurricane workshops, or Commission decisions on utility storm preparedness plans. All of this information is distributed via the PSC Twitter account (https://twitter.com/floridapsc) at appropriate times throughout the year.

Utility Preparedness and Storm Hardening Activities

Throughout the year, utilities participate in hurricane exercises and drills in order to better prepare for a storm event. Prior to hurricane season, utilities ensure that they have the required internal materials on hand, as well as commitments for external resources which may be needed following a storm. Utilities also partake in hurricane preparedness exercises and meetings with local governments, and ensure that the proper critical facilities (i.e., hospitals, water and wastewater treatment plants, and fire stations) are identified.

The storm hardening activities outlined in each IOUs' hardening plan vary to a degree; however, the overall goal of strengthening the utility's electric facilities is a common objective. Some storm hardening programs include: tree trimming, pole inspections, hardening of feeders and laterals, and undergrounding. All of these activities are designed to mitigate storm damage and decrease outage duration time, though these actions cannot entirely eliminate storm related outages. Utilities typically focus hardening efforts on transmission facilities, as these can impact large numbers of customers. Hardening efforts are also prioritized for facilities that serve critical infrastructure, such as hospitals, first responders, water and wastewater treatment plants, and local EOCs. Such facilities are generally restored first following a storm event.

IOUs complete tree trimming of their distribution circuits, comprised of laterals and feeders, in three to six-year cycles. Feeders run outward from substations and have the capability of serving thousands of customers. Laterals branch from the feeder circuits and are the final portion of the electric delivery system, serving a smaller portion of customers, and are typically associated with

residential areas. Each year, IOUs trim a certain percentage of their total lateral and feeder miles as part of their hardening plans; however, the trees trimmed only include those that are in the utilities' rights of way. Most IOUs trim overhead feeder circuits over a three-year trim cycle, excluding TECO which is currently on a four-year trim cycle.[7] For overhead laterals, IOUs must complete all trimming during a maximum six-year cycle.[8]

Table 2-1 below lists the number of miles trimmed that each IOU has completed for each IOU's feeder and lateral circuits since 2006. The number of miles provided includes planned tree trimming and may not include hot-spot or mid-cycle trimming. Hot-spot tree trimming occurs when crews are sent to specific areas that require unscheduled trimming due to rapid growth.

Table 2-1.
Vegetation Clearing from Feeder and Lateral Circuits (in Miles)

	DEF		FPL		FPUC		GPC		TECO	
	Feeders	Laterals	Feeders	Laterals	Feeders	Laterals	Feeders	Laterals	Feeders	Laterals
2006	723	2,703	10,094	825	-	-	-	-	268	840
2007	2,112	2,203	4,454	2,215	-	-	1,878	675	363	945
2008	708	2,544	4,262	2,078	59	86	274	821	374	806
2009	467	3,178	4,151	2,768	63	96	274	821	374	806
2010	787	4,139	5,222	2,741	65	84	281	1,060	617	1,634
2011	2,370	1,132	4,337	3,367	68	205	259	1,530	606	1,514
2012	196	3,228	4,045	3,703	52	123	240	857	435	1,282
2013	476	3,810	4,637	4,124	67	129	240	1,293	374	1,098
2014	3,297	2,782	4,249	3,685	52	145	241	1,294	465	1,161
2015	1,024	3,579	4,209	3,817	51	134	241	913	454	1,146
2016	1,016	2,173	4,418	3,745	62	188	241	331	386	926
2017	2,106	1,909	4,381	3,560	29	86	241	446	199	627

Source: IOUs' 2006-2017 distribution reliability reports.

As part of each IOUs' storm hardening plan, the Eight-Year Wooden Pole Inspection Program requires each utility to inspect and assess the strength of all of its installed wooden poles over an eight-year period. IOUs also have wooden pole replacement programs in place where a select number of existing poles are replaced with hardened poles. The National Electric Safety Code is used as a basis for the design of the replacement poles. Table 2-2 shows the number of wooden poles replaced from 2006 to 2017.

[7] Order No. PSC-12-0303-PAA-EI, issued June 12, 2012, in Docket No. 20120038-EI, *In re: Petition to modify vegetation management plan by Tampa Electric Company*.
[8] Order No. PSC-07-0468-FOF-EI, issued May 30, 2007, in Docket No. 20060198-EI, *In re: Requirement for investor-owned electric utilities to file ongoing storm preparedness plans and implementation cost estimates*.

Table 2-2.
Wooden Pole Replacement

	DEF		FPL		FPUC		GPC	TECO	
	Trans.	Distr.	Trans.	Distr.	Trans.	Distr.	Distr.	Trans.	Distr.
2006	-	-	307	2,334	-		-	-	-
2007	956	1,130	1,471	8,164	-		185	494	1,536
2008	866	1,903	1,966	7,533	47		736	781	2,056
2009	704	3,018	3,206	7,342	34		969	713	1,640
2010	-	-	1,409	10,639	215		418	900	2,815
2011	635	2,887	1,559	9,942	215		1,060	1,060	3,328
2012	803	4,670	816	10,454	242		1,032	683	4,957
2013	1,347	5,722	1,106	13,639	135		380	866	6,572
2014	2,028	5,597	2,070	12,777	536		790	720	6,038
2015	1,738	8,420	1,888	15,089	382		676	649	5,392
2016	698	4,429	1,737	12,067	254		693	940	6,701
2017	530	2,654	1,934	8,486	-		746		
Total	10,305	40,430	19,469	118,466	2,060		6,939	7,806	41,035

Source: Document Nos. 01516-2018, 01517-2018, 01518-2018, 01519-2018, 01520-2018, DEF's 2006-2017 distribution reliability reports.

In response to staff's data requests, the IOUs stated that the majority of recent underground projects were for new construction, rather than the conversion of overhead facilities to underground facilities. Since 2006, the installed underground facilities have increased by approximately 5,300 miles for the IOUs. The total amount of installed underground facilities during the past five years was approximately 2,200 miles.

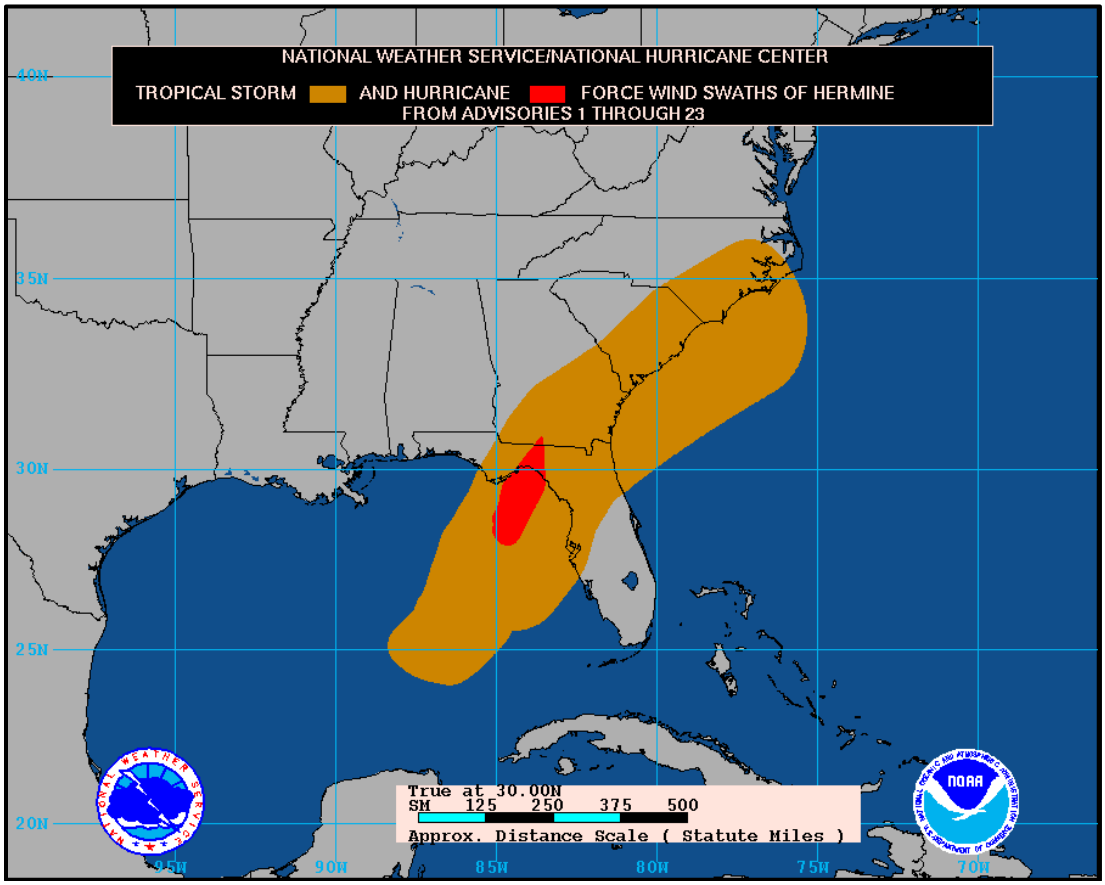
The construction of underground electrical distribution systems, when compared with overhead systems, is more expensive. For construction of underground, the customer is responsible for the difference in the costs between underground and overhead, which often results in an installation barrier. Pursuant to Rules 25-6.0342 and 25-6.064, F.A.C., the costs and benefits of storm hardening are factored into the cost difference calculation for new construction or conversion to underground facilities, as reflected on each IOUs' tariff.

Section III: Summary of 2016 and 2017 Storms

Hurricane Hermine

Hurricane Hermine made landfall on September 2, 2016, near Wakulla and Jefferson counties. Hurricane Hermine was a Category 1 hurricane when it made landfall, primarily affecting the Big Bend area. Figure 3-1 illustrates the path of Hurricane Hermine, and the areas that experienced tropical storm and hurricane force winds. The National Hurricane Center defines tropical storm force winds as winds between 39 miles per hour (mph) to 73 mph. Winds that are equal to or exceeding 74 mph are defined as hurricane force winds.

Figure 3-1.
Hurricane Hermine – Tropical Storm and Hurricane Force Winds



Source: NOAA's National Hurricane Center

Wind, rainfall, and storm surge data was requested from IOUs, Municipals, and Cooperatives for each hurricane. A total of 36 utilities provided data and the maximum reported sustained winds, wind gusts, rainfall, and storm surge for Hurricane Hermine, summarized in Appendix C. The three counties that experienced some of the highest sustained winds and wind gusts from

Hermine were Jefferson, Madison, and Taylor. These counties also received high levels of rainfall; however, the two counties with the largest amounts of rainfall were Manatee and Sarasota. These two counties did not rank highest for any other category, and appear to be outliers in the reported weather data. The reason for the large amount of rain experienced in Manatee and Sarasota counties may have been due to strong storm bands that hit that part of the state. The three counties that had the largest storm surges were Dixie, Taylor, and Wakulla. All of these counties, with the exception of Manatee and Sarasota, were located in the area where Hurricane Hermine made landfall.

Table 3-1 provides the five counties with the highest number of outages for Hurricane Hermine. This outage data was reported to the state EOC by IOUs, Municipals, and Cooperatives at set intervals of reporting times. The percentages of accounts without power were calculated based on the peak number of customer accounts without power divided by the total number of customer accounts for that county, which includes IOUs, Municipals, and Cooperatives customers. The total peak percentage of accounts in the state without power was approximately 3 percent for Hurricane Hermine. Appendix B provides a comprehensive list of the peak number of customer accounts by county that were without power for each hurricane.

Table 3-1.
Hurricane Hermine – Five Counties with Highest Maximum Outages

	Max. Account Outages	Max. Percent of Account Outages
Hamilton	5,864	87.9%
Jefferson	5,762	71.5%
Lafayette	2,965	71.5%
Madison	7,278	69.0%
Wakulla	14,009	93.0%

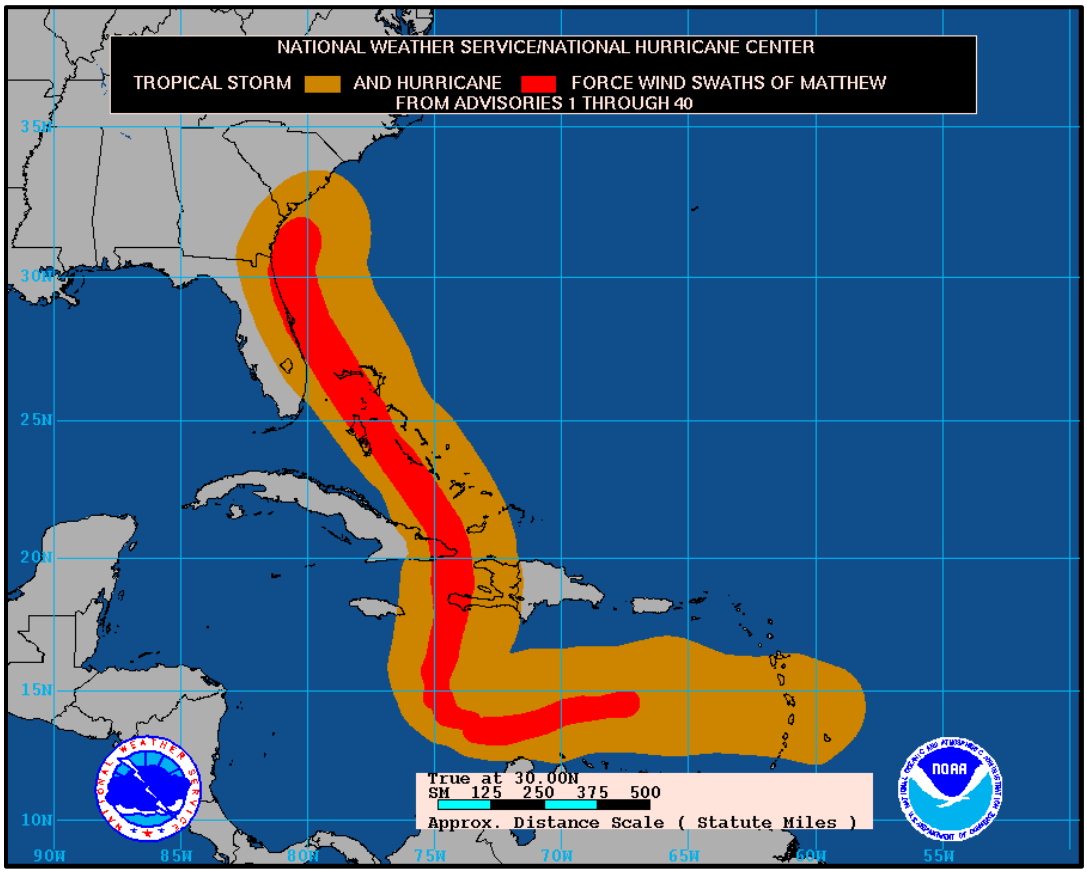
Source: State EOC power outage reports.

The outages for Jefferson, Madison, and Wakulla counties correlate to the reported weather data as they were among the counties that experienced the highest winds, rainfall, and storm surges. Wind data was not reported for Hamilton and Lafayette counties, though they both received large amounts of rainfall.

Hurricane Matthew

While Hurricane Matthew never made landfall in Florida; it passed along Florida's east coast shoreline, where some areas experienced sustained hurricane force winds. Hurricane Matthew began as a Category 4 hurricane on October 7, 2016, but weakened and later became a Category 2 hurricane northeast of Jacksonville Beach on October 8, 2016. Figure 3-2 illustrates the path of Hurricane Matthew, and the areas that experienced tropical storm and hurricane force winds.

Figure 3-2.
Hurricane Matthew – Tropical Storm and Hurricane Force Winds



Source: NOAA's National Hurricane Center

Wind speed, rainfall, and storm surge data for Hurricane Matthew is contained in Appendix D. The three counties that experienced some of the highest sustained winds and wind gusts for Hurricane Matthew were Brevard, St. Johns, and Volusia. From the reported rainfall data, the counties with the three highest amounts of rainfall were Brevard, Indian River, and St. Lucie. The three counties that had the largest storm surges were Flagler, Nassau, and St. Johns. All of these counties are located on Florida's east coast and correspond to the path of storm. Table 3-2 provides the five counties with the highest number of outages for Hurricane Matthew. The total peak percentage of customer accounts in the state without power was 11 percent.

Table 3-2.
Hurricane Matthew – Five Counties with Highest Maximum Outages

	Max. Account Outages	Max. Percent of Account Outages
Flagler	57,016	100.0%
Indian River	59,244	67.2%
Putnam	27,393	66.8%
St. Johns	78,610	89.6%
Volusia	257,718	92.0%

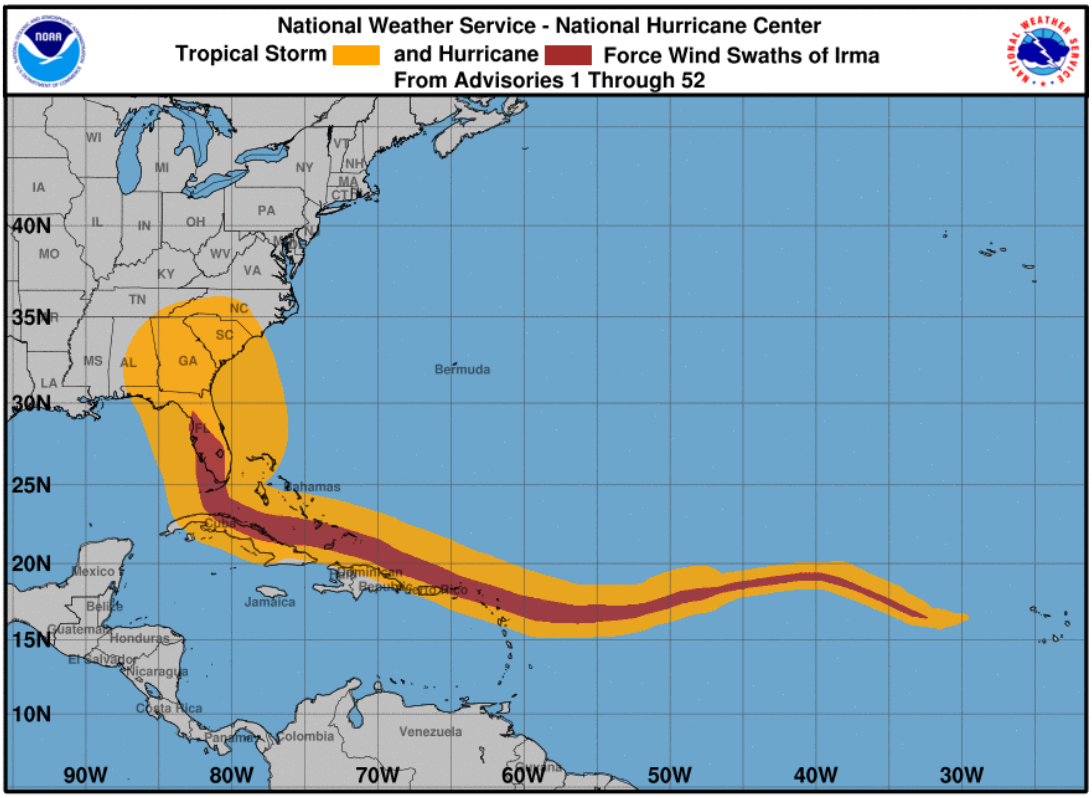
Source: State EOC power outage reports.

The outages for Flagler, Indian, St. Johns, and Volusia counties correlate to the reported weather data as they were among the counties that experienced the highest winds, rainfall, and storm surges. Rainfall data was not reported for Putnam County; however, it is located next to St. Johns County, which experienced severe weather conditions.

Hurricane Irma

Hurricane Irma was the first major hurricane to make landfall in Florida since the 2004 and 2005 hurricane seasons. On September 10, 2017, Hurricane Irma made landfall in the Florida Keys as a Category 4 hurricane and weakened to a Category 3 hurricane as it made a second landfall near Marco Island, Florida on the same day. The storm continued to weaken as it moved over Florida, affecting all 67 counties in the state and resulting in widespread power outages. Figure 3-3 illustrates the path of Hurricane Irma, and the areas that experienced tropical storm and hurricane force winds.

Figure 3-3.
Hurricane Irma – Tropical Storm and Hurricane Force Winds



Source: NOAA's National Hurricane Center

Wind speed, rainfall, and storm surge data for Hurricane Irma is contained in Appendix E. The three counties that experienced the highest maximum sustained winds for Hurricane Irma were Collier, Monroe, and Polk. The largest amount of rainfall was reported for Bradford, Hillsborough, and St. Lucie counties. The three counties that had the largest maximum storm surge were Collier, Monroe, and Nassau. Due to the path of Hurricane Irma, many of the southernmost counties, such as Monroe and Collier, experienced high winds and storm surges, while parts of central Florida had large amounts of rain. Additionally, parts of northeast Florida, such as Nassau County, experienced high winds and storm surges due to the outer bands and the path of the storm.

Table 3-3 provides the five counties with the highest number of outages for Hurricane Irma. The total peak percentage of customer accounts in the state without power was 62 percent.

Table 3-3.
Hurricane Irma – Five Counties with Highest Maximum Outages

	Max. Account Outages	Max. Percent of Account Outages
Hardee	11,976	97.4%
Hendry	18,750	100.0%
Highlands	62,010	99.3%
Nassau	43,740	97.6%
Okeechobee	21,990	96.5%

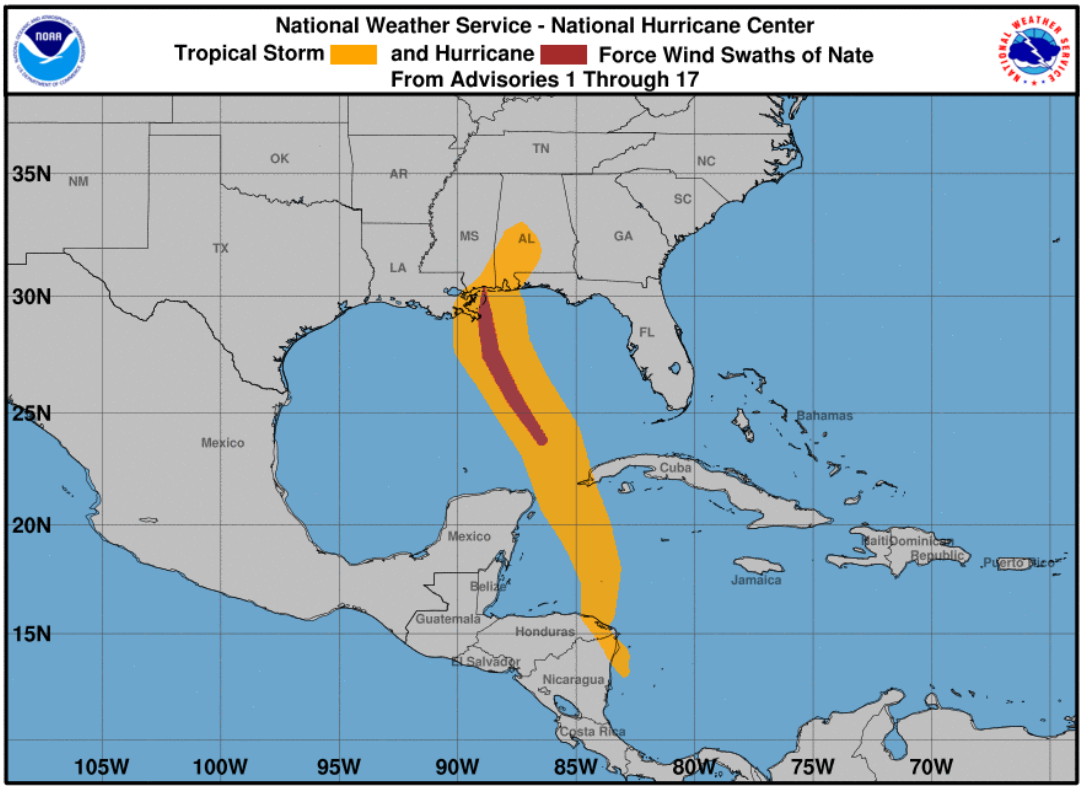
Source: State EOC power outage reports.

The outages for Nassau County correlate to the reported weather data as it was among the counties that experienced high storm surges. Okeechobee, Hardee, Henry, and Highlands counties are in close proximity to one another and are located in south Florida, near Hurricane Irma's landfall. All of these counties experienced wind gusts over 100 mph and all but Okeechobee recorded over 10 inches of rainfall.

Hurricane Nate

On October 7, 2017, Florida was impacted by a second storm, Hurricane Nate, which made its first landfall at the mouth of the Mississippi River as a Category 1 hurricane, followed by a second landfall near Biloxi, Mississippi on the same day. While Hurricane Nate did not make landfall in Florida, parts of the panhandle were impacted by the hurricane. Figure 3-4 illustrates the path of Hurricane Nate, and the areas that experienced tropical storm and hurricane force winds.

Figure 3-4.
Hurricane Nate – Tropical Storm and Hurricane Force Winds



Source: NOAA's National Hurricane Center

Wind speed, rainfall, and storm surge data for Hurricane Nate is contained in Appendix F. The impact of Hurricane Nate was much smaller in scope compared to the previous three hurricanes. The three counties that experienced the highest sustained winds, wind gusts, and rainfall were Escambia, Okaloosa, and Santa Rosa. The three counties that had the highest storm surges were Escambia, Franklin, and Santa Rosa. All of these counties are located in Florida's panhandle, close to where Hurricane Nate made landfall. Table 3-4 provides the five counties with the highest number of outages for Hurricane Nate. The total peak percentage of accounts in the state without power was 0.1 percent.

Table 3-4.
Hurricane Nate – Five Counties with Highest Maximum Outages

	Max. Account Outages	Max. Percent of Account Outages
Escambia	5,384	3.4%
Holmes	77	0.7%
Okaloosa	6,382	5.9%
Santa Rosa	1,712	2.2%
Walton	613	1.0%

Source: State EOC power outage reports.

The outages for Escambia, Okaloosa, and Santa Rosa counties correlate to the reported weather data as they were among the counties that experienced some of the highest winds, rainfall, and storm surges. While Walton County did not have the highest reported winds and rainfall, it experienced high winds comparable to Okaloosa County, as well as receiving several inches of rain. Wind data was not reported for Holmes County; however, it is located in the panhandle area near Okaloosa and Walton counties.

Section IV: Review of Outage Restoration Activities

Restoration Process

The restoration process is a year-round activity. Many utilities across the state engage in exercises that simulate storms in order to better prepare for an actual hurricane or other significant weather event. In the event of a hurricane, utilities may initiate pre-staging meetings and activities as early as 240 hours before landfall, which may include requests for mutual aid. Utilities communicate with county EOCs to identify critical facilities (i.e., hospitals, water and wastewater treatment plants, and fire stations) and coordinate on other restoration activities. As the storm approaches, restoration activities will continue until winds reach 35-40 miles per hour, at which time crews will be called back for a stand-down period. Once winds drop below 35-40 miles per hour and weather conditions are considered to be safe following a storm, utility crews are re-deployed to continue the restoration process.

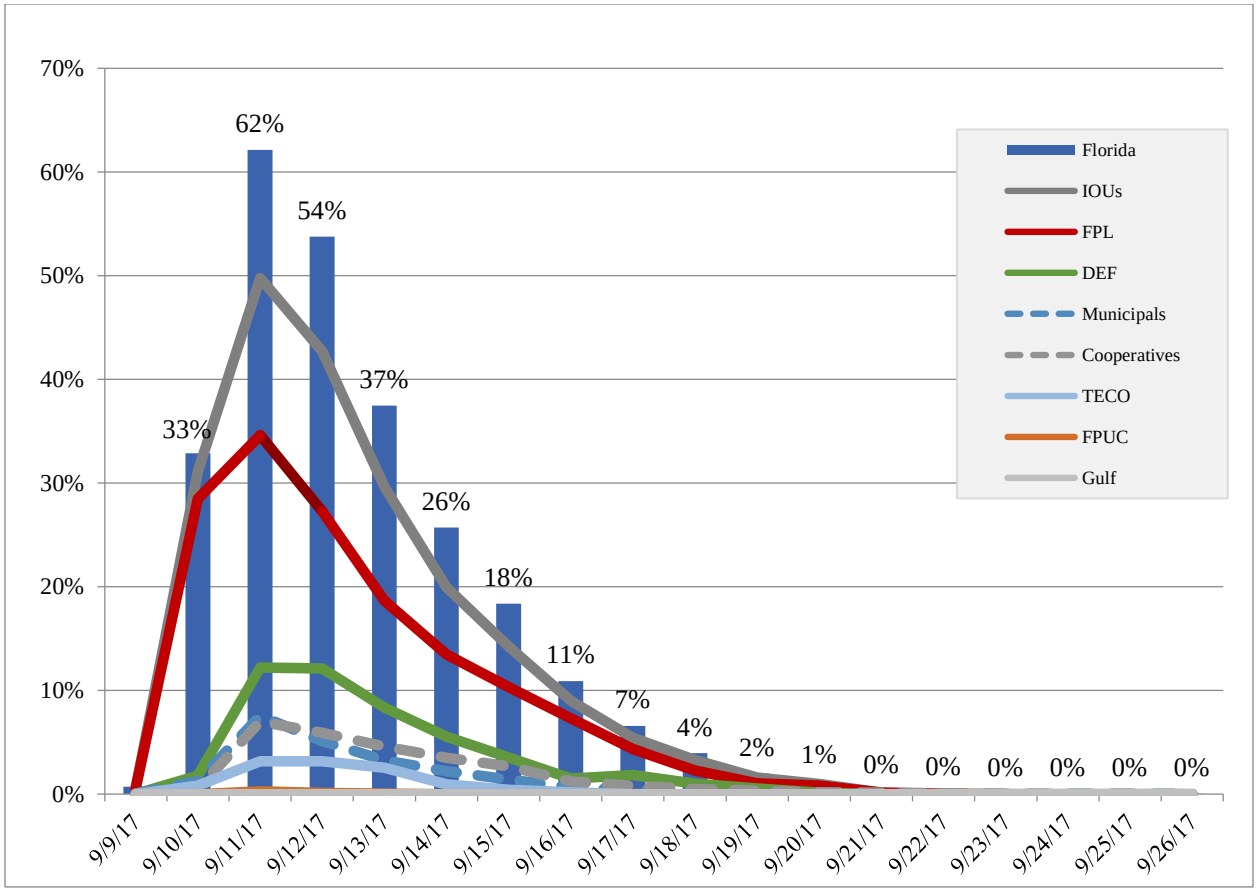
As part of restoration activities, damage assessment is completed prior to and following the storm. Before a storm makes landfall, an assessment of potential damage is completed by utilities based on the forecasted path of the storm. This information can be used to determine if mutual aid and additional material resources should be requested. Once the storm has passed, a post-storm damage assessment is completed, where utilities can establish what facilities have been damaged, refine restoration time estimates, manage workloads, and allocate resources to where they are needed. Restoration can continue following the storm, beginning with repairs to generation plants and transmission facilities that sustained damage, followed by repairs to substations and feeders. Substations and feeders that power critical infrastructure are prioritized first in order to get those necessary facilities back in service. Feeders that serve the largest number of customers are restored next, and finally laterals that serve neighborhoods with fewer customers are repaired and restored. Overall, utilities strive to restore as many customers as possible in the shortest amount of time.

Based on a review of the utility presented data for each hurricane, no abnormalities were identified between storms for the restoration process. Hurricane Irma affected the entire state and was the first significant test of Florida's electric infrastructure since the 2004 and 2005 hurricane season. For simplification purposes, and due to the size and scope of the storm, the following subsections on restoration, outage causes, mutual aid, overhead and underground, and impediments are specific to Hurricane Irma only. Data from other storms were used for comparison purposes to determine if there were any anomalies or unique circumstances.

Restoration Data

Using outage data reported to the Florida Division of Emergency Management (DEM), Figure 4-1 provides the number of customer accounts without power in proportion to the total state caused by Hurricane Irma. The peak outages occurred on September 11, 2017, with approximately 62 percent of all customers in the state without power. Five days following this peak, the number of outages dropped to approximately 11 percent. On September 20, 2017, 10 days following the outage peak, the percent of customer accounts without power dropped below 1 percent.

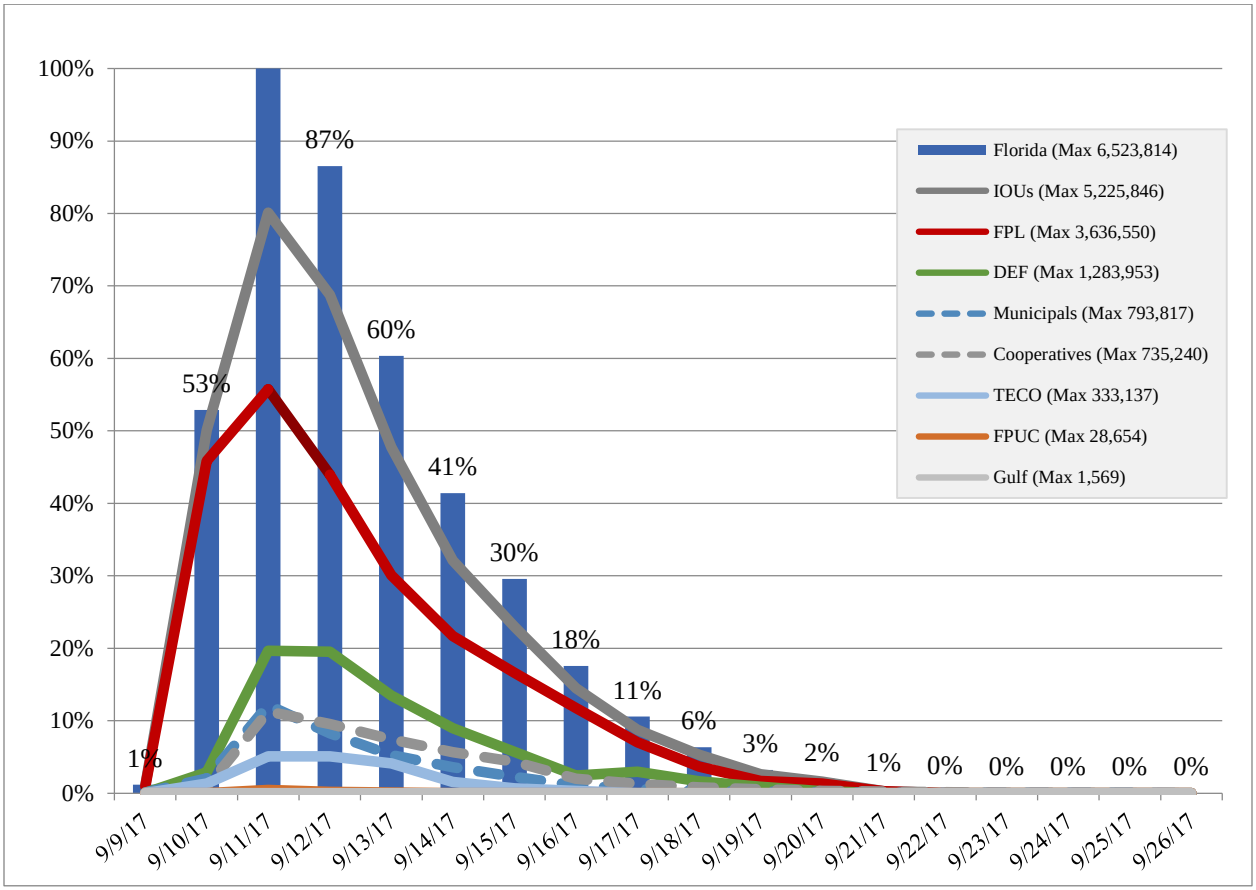
Figure 4-1.
Hurricane Irma – Daily Maximum Percent of Florida's Customers without Power



Source: State EOC power outage reports.
Note: Individual utility outage maximums occurred at different times and do not add to the total.

Figure 4-2 provides the affected customers that were without power from Hurricane Irma. As mentioned above, the peak number of customers without power occurred on September 11, 2017, and by September 14, 2017, the number of affected customers without power was below 50 percent. By September 20, 2017, the number of customers without power dropped to 2 percent. For several utilities, once the number of customers without power dropped to 2 percent or less, the utility stopped reporting outages to the DEM as these outages could be unrelated to the storm event.

Figure 4-2.
Hurricane Irma – Daily Maximum Percent of Affected Customers without Power



Source: State EOC power outage reports.
Note: Individual utility outage maximums occurred at different times and do not add to the total.

Overall, Figures 4-1 and 4-2 illustrate that the graphs for each IOU is similar in shape to the Municipals, and Cooperatives. This demonstrates that there were comparable power restoration achievements for the different utility groups, and no irregularities were observed in the data.

During the May 2018 workshop, FPL provided a comparison of outage data and restoration times for Hurricanes Wilma and Irma. Table 4-1 illustrates that it took one day to restore power to 50 percent of FPL's customer for Hurricane Irma, while it took five days for Hurricane Wilma. Additionally, it took 10 days to restore all customers for Hurricane Irma, and it took 18 days for Hurricane Wilma. Also at the workshop, TECO provided a comparison of outage data for Hurricanes Jeanne (11 days) and Irma (7 days). No other utility provided a similar comparison. While each storm is different and presents its own set of difficulties, it appears that the amount of time to restore all customers has decreased compared to previous storms.

Table 4-1.
FPL – Outage and Restoration Data for Hurricanes Wilma and Irma

	Wilma	Irma
Customer outages	3.2M	4.4M
Staging sites	20	29
% Restored / days	50% / 5	50% / 1
All restored (days)	18	10
Avg. days to restore	5.4	2.1

Source: FPL's presentation at the May 2, 2018, Commission Workshop.

Outage Causes

Data collected from 39 utilities identified that the biggest source of outages was vegetation issues. Many utilities described that these issues were from fallen trees or branches that were outside of the utilities' rights of way. Also, additional trimming by the utilities within their rights of way would not eliminate these vegetation related outages. It should also be noted that typical hardening projects are designed and constructed to withstand extreme wind loads, not fallen trees. The second most prevalent outage cause was from embedded severe weather events, such as tornadoes, microbursts, and flooding.

Some hardened and non-hardened data was presented at the workshop, which showed that the efforts by the PSC and utilities appear to be working. The IOUs affirmed that the hardened facilities, including poles, performed better than non-hardened facilities. FPL, FPUC, and TECO presented data on replacements of hardened versus non-hardened facilities for Hurricane Irma. FPL reported replacement of 5 non-hardened facilities and FPUC reported replacement of 37 non-hardened facilities. Neither utility reported replacement of hardened facilities. TECO replaced 20 hardened facilities and 165 non-hardened facilities. DEF reported no replacements of hardened facilities and repairs or replacement of 139 non-hardened facilities. Gulf Power Company (GPC) did not provide the number of non-hardened facilities that sustained damage; however, they reported that no hardened facilities were damaged.

The IOUs presented information on the performance of overhead and underground facilities at the workshop and reported that underground facilities generally performed better than overhead. Just like overhead facilities, it should be noted that underground facilities are also susceptible to damage. The damage may be caused by uprooted trees and flooding and the repairs to such facilities typically take longer to complete.

Mutual Aid

Many mutual aid agreements among IOUs throughout the country are managed by seven Regional Mutual Assistance Groups (RMAGs). Florida's IOUs are members of the Southeastern Electric Exchange RMAG. RMAGs facilitate the process of identifying available restoration workers and help coordinate the logistics to help with restoration efforts. IOUs that are in RMAGs follow guidelines established by the Edison Electric Institute (EEI), and also establish additional guidelines that aid in the communication process and rapid mobilization and response

efforts. If needed, utilities in one RMAG will assist those in another region.[9] EEI also communicates regularly with the associations that serve Municipals and Cooperatives during major outage incidents, providing a process for electric companies to request support from other electric companies that have not been affected by major outage events.[10]

Section 252.40, F.S., Mutual Aid Arrangements, authorizes the governing body of each political subdivision of the state, "to develop and enter into mutual aid agreements within the state for reciprocal emergency aid and assistance in case of emergencies too extensive to be dealt with unassisted." It also provides that, "[s]uch agreements shall be consistent with the state comprehensive emergency management plan and program, and in time of emergency it shall be the duty of each local emergency management agency to render assistance in accordance with the provisions of such mutual aid agreements to the fullest possible extent."

The American Public Power Association (APPA), together with state and regional public power utilities and organizations, coordinate the mutual aid network for the nation's public power utilities. These utilities have local, state, and regional contracts and agreements for mutual aid, and there is a national mutual aid agreement with over 2,000 public power and rural electric cooperatives so they are able to assist one another when needed. In addition to helping public power utilities in need, public power utilities also provide mutual aid to cooperatives and to IOUs when requested and have also received assistance from cooperatives and IOUs when needed. Mutual aid played a key role in restoring the power quickly after Hurricane Irma. Public power utilities and IOUs aided one another in the restoration efforts.[11]

Prior to Hurricane Irma making landfall, many utilities made requests for mutual aid. Based on information from the state EOC, a total of 49 utilities received mutual aid. Information on the number of crew managers and crews managed, which includes both utility and mutual aid crews, was requested from utilities. Table 4-2 illustrates the large number of crews that were managed by a limited number of experienced managers. From the 47 utilities that responded to staff's data request, the average experience level of the crew managers was 25 years. This demonstrates the level of expertise that is required to coordinate large recovery efforts, particularly in regard to mutual aid crews that are unfamiliar with local terrain, the transmission and distribution systems, and procedures specific to each utility. Considering the large number of mutual aid crews that were brought in to assist with power restoration, the number of injuries were low and there were no fatalities. Of the total 103 injuries, 38 were reported for utility personnel and 65 were reported for mutual aid personnel.

[9] Miles Keogh and Sharon Thomas, NARUC Grants and Research, *Regional Mutual Assistance Groups: A Primer* (November 2015).
[10] Edison Electric Institute, *Understanding the Electric Power Industry's Response and Restoration Process* (October 2016).
[11] APPA letter to U.S. House Energy & Commerce Committee, Subcommittee on Energy (November 1, 2017).

Table 4-2.
Hurricane Irma – Utility Coordination, Injuries, and Fatalities

	Managers	Crews Managed	Meals	Injuries	Fatalities
IOU	48	22,398	1,409,352	76	0
Municipals	96	1,935	109,266	13	0
Cooperatives	104	3,295	171,803	14	0
Total	248	27,628	1,690,421	103	0

Impediments to Restoration

Data was collected from 39 utilities on the primary impediments that were identified for Hurricane Irma. Consistent with prior hurricanes, the biggest impediment to restoration was clearing vegetation, much of which was debris from fallen trees or branches that were outside of the utilities' rights of way. Other impediments to restoration unique to Hurricane Irma were roadway congestion and lack of motor fuel availability due to the size and scale of evacuations. Therefore, utility crews that were tasked to aid in power restoration for various areas were delayed by some fuel shortages and traffic congestion on the roadways.

Forensic Analysis

As part of their storm hardening plans, IOUs conduct post-storm forensic analyses which reviews storm-related data and an assessment of damaged facilities that did not perform as designed. Following a review of the storm damage data, which typically takes several months, a report is issued outlining the findings of the review. For Hurricane Irma, FPL, DEF, and TECO completed a forensic analysis to evaluate the performance of their facilities during the storm. GPC and FPUC indicated that forensic analyses were not completed due to a lack of significant damage or determined that all damage was caused by vegetation.

DEF provided five forensic analysis reports related to failures of wooden distribution poles, transmission wooden poles, and a transmission tower. One of DEF's forensic reports included analysis on a steel transmission tower that fell during Hurricane Irma. The failure was identified as corrosion at the base of the tower. DEF's forensic reports also identified 27 wooden transmission pole failures due to high winds, with wood rot contributing to some of the failures. FPL provided a post-storm forensic review for Hurricane Irma, which identified five wooden transmission pole failures caused by wind only. TECO's forensic analysis identified three leaning structures following Hurricane Irma, and at the workshop, TECO reported that it had ten transmission structure failures.

Section V: Customer Communication

As noted, customers also have a critical role in the overall level of storm preparedness and restoration. When advised that power, water, and even cell phone service could be disrupted for three to five days, customers should plan accordingly. The utilities and the Commission provide information to consumers regarding storm preparedness, such as hurricane survival kits, portable generator safety, and ways to prepare a home before a storm.

Following a storm, customers are provided various methods to communicate with utilities. Customers can report a power outage to the utility through various means such as interactive voice response systems, customer call centers, the utility's website, mobile applications, and the PSC. A total of 41 utilities provided data on the number of customer representatives that were utilized during Hurricanes Hermine, Matthew, Irma, and Nate. This information is summarized in Table 5-1, which includes third-party representatives.

Table 5-1.
Total Number of Utility and Third-Party Customer Contact Representatives

	Hermine	Matthew	Irma	Nate
IOUs	948	1,825	2,418	106
Municipals	300	571	1,059	48
Cooperatives	163	84	297	6
Total	1,411	2,480	3,774	160

Source: Utilities' responses to staff's first data request, No. 14.

Table 5-2 provides the number of customer contacts for Hurricanes Hermine, Matthew, Irma, and Nate. Customer contacts may include various forms of communication, including phone, email, mobile application, utility website, and social media.

Table 5-2.
Total Customer Contacts

	Hermine	Matthew	Irma	Nate
IOUs	395,358	3,605,174	11,424,246	30,545
Municipals	71,302	414,202	1,634,438	0
Cooperatives	53,804	12,053	207,488	343
Total	520,464	4,031,429	13,266,172	30,888

Source: Utilities' responses to staff's first data request, No. 15.

Table 5-3 provides the average number of customer contacts that were handled by each utility and third-party customer contact representatives. For Hurricane Irma, an average number of 2,513 customer contacts per representative were handled for the IOUs, which demonstrates the large scale of communication that occurred between customers and the electric utilities.

Table 5-3.
Average Number of Customer Contacts per Utility Representative[12]

	Hermine	Matthew	Irma	Nate
IOUs	628	1,776	2,513	332
Municipals	138	774	1,061	0
Cooperatives	439	84	796	57

Source: Utilities' responses to staff's first data request, Nos. 14 and 15.

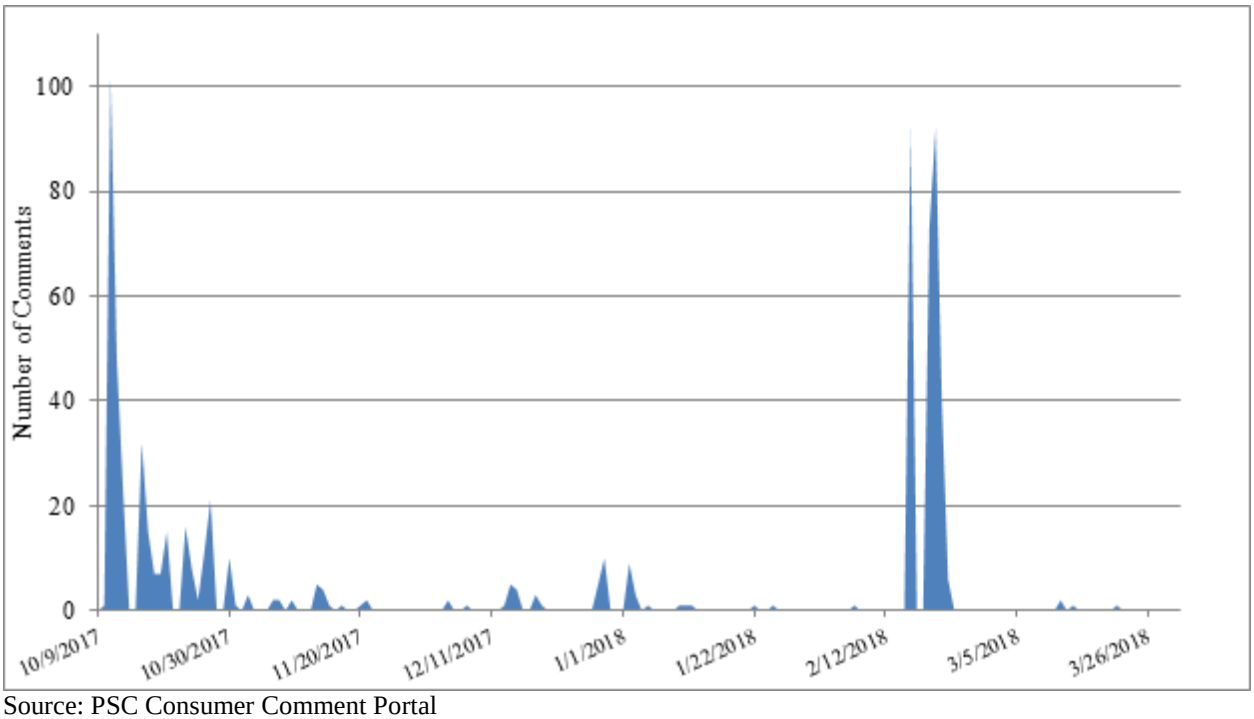
Following the establishment of Docket No. 20170215-EU, a customer portal was opened on the Commission's website, allowing customers to submit comments regarding their reaction to utility restoration/communication efforts. The portal provided consumers four categories to select from, as well as the option to submit written comments, where consumers could address any specific concerns. The four categories that consumers could select from were:

- Power restoration time.
- Information provided by electric utility provider prior to the storm.
- Information provided by electric utility provider after the storm.
- Other.

[12] It should be noted that this average includes only utilities that were affected by a storm.

Figure 5-1 provides a timeline of the number of comments received through the PSC Consumer Comment Portal.

Figure 5-1.
PSC Portal – Timeline of Consumer Comments Received



Source: PSC Consumer Comment Portal

The consumer portal was opened on October 9, 2017, and for the month of October the PSC received 319 comments. These comments were mostly related to consumers' experiences and feedback during Hurricane Irma. Comments focused on frustration with timely communication, inaccurate estimated restoration times, and tree trimming. The number of comments received decreased after the month of October, but there was a small swell of comments from December 28, 2017, to January 12, 2018. During this period, the consumers expressed concerns related to the potential addition of a surcharge to customer bills as a result of the hurricane. From February 16 to February 22, 2018, a total of 303 comments were received, which were predominately focused on supporting and encouraging the use of distributed solar generation. The portal was closed on May 1, 2018, with a total of 701 comments received.

Staff collected and sorted the comments by category and divided them into subcategories based on whether the comment was negative, positive, or neutral. Table 5-4 provides a summary of the comments that were received.

Table 5-4.
PSC Portal – Customer Comments

Category	Comments
Power Restoration Time	345
Information Provided Prior to the Storm	14
Information Provided After the Storm	69
Other	273
Total	701
Positive vs. Negative Comments	
Negative Comments on Electric Utility	346
Positive Comments on Electric Utility	74
Not Expressed	281
Total	701

Source: PSC Consumer Comments Portal

Table 5-5 provides the number of comments received for IOUs, Municipals and Cooperatives. Two of the customer comments did not provide the names of their electric utilities.

Table 5-5.
PSC Portal – Customer Comments by Utility Type

Utility Type	Comments
Investor Owned Electric Utility	616
Municipal Electric Utility	48
Cooperative Electric Utility	35
Not Specified	2
Total	701

Source: PSC Consumer Comments Portal

The most prevalent topics were related to supporting and encouraging the use of distributed solar generation, cost responsibility for restoration, frustration with communication, tree trimming, and effectiveness of storm hardening.

Table 5-6 provides the number of comments that were received for each of these topics.

Table 5-6.
PSC Portal – Most Prevalent Topics Discussed in Customer Comments

Subcategory	Comments	Percent of Total
Support and encouragement of solar	258	37%
Cost responsibility for restoration	105	15%
Frustration with timely communications	84	12%
Tree trimming	73	10%
Effectiveness of hardening	60	9%

Despite the wide-spread impact of Hurricane Irma on the state and the number of customers that were affected, the number of comments the Commission received were nominal.

Based on the consumer comments received, one of the largest concerns was regarding cost responsibility for restoration. While an IOU's storm hardening plan may be approved by the Commission, this does not guarantee an IOU the recovery of all incurred costs for the implementation of the plan. The issue of storm hardening costs is addressed during an IOU's general rate case proceeding, since these costs are considered a part of providing electric service in Florida. During a general rate case, the costs for storm hardening are taken into consideration and the Commission makes a ruling on whether the costs are prudent. However, recent rate case proceedings have resulted in settlement agreements between the parties, and the storm hardening costs are not specifically identified in the settlement agreements. While storm hardening may help to reduce the number and magnitude of storm related outages, it does not prevent outages from occurring. Storm restoration is addressed differently and is in addition to storm hardening costs. Following Hurricane Andrew in 1992, which resulted in changes to the commercial insurance market, IOUs requested that the Commission allow for storm damage self-insurance. On an individual basis, the Commission considered various forms of self-insurance for the IOUs and settled on a three part approach:

- A storm damage reserve
- An annual storm accrual
- A provision to seek recovery of costs that exceed the storm damage reserve balance

Cost recovery of storm related damage is typically addressed through a storm damage reserve, a surcharge, or a combination of the two. A storm damage reserve can address the costs associated with less severe storm damage, and the storm reserves annual accrual can help to alleviate the consumer rate shock by collecting the amount over a longer period of time. Once the storm reserve reaches a target value, the storm accrual can be suspended.

In order to define what type of costs can be recovered, the Commission adopted Rule 25-6.0143, F.A.C., which specifies that only incremental costs (e.g. overtime payroll, contract labor hired for storm restoration) can be charged to the storm reserve. As outlined in recent settlement

agreements, in the event that the storm reserve is depleted from a major storm or multiple storms, or if a utility does not have a storm reserve, a surcharge can be put into effect to recover incremental costs. In such an instance, an IOU can file a petition for a surcharge to be implemented over a set period of time, depending on the total amount of incurred costs. However, all resources and labor costs are initially borne by the IOU prior to the surcharge petition. Once a docket has been opened for a surcharge petition, initiation of interim recovery can begin, which is subject to true-up once the storm damage and restoration costs are found eligible for recovery pursuant to the Rule.

Stakeholder Comments

In addition to comments from utilities and customers, staff also solicited comments from non-utility stakeholders, which included Associated Industries of Florida, the Florida Chamber of Commerce, Florida Association of Counties, and Florida League of Cities. Appendix A provides a summary of the stakeholder comments that the Commission received. A total of 14 stakeholders provided comments on the topics of vegetation management, undergrounding, and coordination and communications. For vegetation management, the comments mainly focused on improving communication between stakeholders and utilities on where and when tree trimming occurs, as well as better educating the public on tree trimming. While the comments on undergrounding varied, many voiced a positive position on undergrounding, though stakeholders expressed differences in opinion on cost responsibility. Last, the comments on coordination and communication largely concentrated on more involvement from utilities at local EOCs, in addition to improving post-event information and power restoration time estimates. Aside from the suggested areas of improvement mentioned, the overall comments that stakeholders provided were positive.

Workshop Summary

Leading up to the workshop, staff provided topics for utilities to address, which included preparedness and restoration processes, hardened vs. non-hardened facility performance, underground vs. overhead performance, impediments to restoration, customer/stakeholder communication, and suggested improvements based on lessons learned. At the workshop held on May 2-3, 2018, the following provided input:

- FPL
- DEF
- TECO
- GPC
- FPUC
- Florida Electric Cooperatives Association, Inc. (FECA)
- Florida Municipal Electric Association (FMEA)
- OPC
- Florida Industrial Power Users Group (FIPUG)
- Florida Retail Federation (FRF)
- City of Dunedin
- St. Johns County
- City of Monticello

At the workshop, all of the IOUs provided data that hardened facilities generally performed better than non-hardened facilities. The IOUs also indicated that there were fewer outages for underground than overhead circuits. The utilities offered suggested improvements such as targeted undergrounding projects, inspections and hardening of non-electric utility poles, addressing vegetation outside of the utilities' rights of way, and increasing coordination with local governments and customers. Stakeholders also suggested increased coordination with local governments and customers and more utility staffing at local EOCs.

Section VI: Conclusions

Conclusion 1: Preparedness and Restoration

Preparedness and restoration efforts appear consistent across the different utility entities. All utilities have similar staging, damage assessment, and workload management processes. Under current pricing policies the installation of underground facilities has been growing steadily, primarily in new construction.

Conclusion 2: Distribution Infrastructure

While granular data appeared to be somewhat lacking due to a focus on restoration, storm hardening efforts by the PSC and utilities appear to be working. The IOUs affirmed that the hardened facilities, including poles, performed better than non-hardened facilities. The Commission's required eight-year wooden pole inspection program resulted in proactive replacement of poles before outages occurred. Based on the wooden pole replacement data provided by the IOUs, as well as the post-storm review, there were fewer broken poles due to non-vegetation causes than with prior storms.

Conclusion 3: Transmission Infrastructure

The transmission infrastructure appears to have generally performed as designed. One of DEF's forensic reports determined that a steel transmission tower had fallen during Hurricane Irma was due to corrosion. The forensic reports for DEF also identified several wooden transmission pole failures, which were due to high winds, as well as wood rot in some instances. FPL's forensic review reported five wooden transmission pole failures due to wind only. TECO's forensic analysis found ten transmission structure failures and three leaning structures.

Conclusion 4: Impediments to Restoration

In addition to the usual impediment of vegetation clearing, the majority of the utilities identified roadway congestion and procurement of fuel to be impediments to restoration during Hurricane Irma. Due to the large number of evacuations, major roadways experienced high amounts of traffic. This presented problems in allowing utility crews to reach areas where aid in power restoration was needed. Additionally, there was a shortage of fuel leading up to and following the storm which also presented an impediment to utilities' restoration efforts.

Conclusion 5: Vegetation Management Coordination

While the miles of laterals trimmed have gradually reduced over the past few years, utilities identified that a major contributor to outages continues to be vegetation outside of the utility's right of way. Therefore, more frequent tree trimming by utilities within rights of way would not alleviate this outage cause. Tree trimming outside of a utility's right of way requires coordination and cooperation with local government and customers.

Conclusion 6: Post-storm Communication

Post storm communication with customers was not an impediment to power restoration, yet many customers expressed dissatisfaction with the information provided by utilities following Hurricane Irma. In particular, customers voiced frustrations with inaccurate power restoration estimates, cost responsibility for restoration, and support for additional distributed solar generation.

Appendix A.
Summary of Stakeholder Comments

Date	Stakeholder	Summary of Comments
01/26/2018	City of Homestead	Regarding coordination on vegetation management, the majority of FPL's power lines are underground, but it should focus on the local level. City ordinances require new construction be underground. Stated that communication with the utility is good, but would like to see more "granular, city-specific" information and outage status.
01/29/2018	City of St. Petersburg Fire Rescue	Suggested continuing aggressive tree trimming program. Continue to support annual pre-storm meetings at city level, and DEF should provide representative to city's EOC. As well as develop a system to report downed lines and assure downed power lines are safe for city crews to work on. Difficult to establish reliable line to communicate with DEF.
01/30/2018	City of Boca Raton	Very little communication from FPL. FPL should make contact with City 48 hours before storm, implement distribution and street light GPS program, have FPL liaison at City or trained staff, and interactive map that provides updates.
02/01/2018	City of South Daytona	Suggested that tree trimming is too infrequent. FPL has tried to inform public of tree trimming, but no way for city/customers to submit tree trimming requests. More information to public about planting vegetation near power lines. For undergrounding, suggested removing requirement to bury additional conduit for future growth. Yearly review of critical infrastructure should be required, and not enough accurate/fast information available during Irma. More representatives to communicate information.
02/06/2018	City of Naples Fire-Rescue Department	FPL is doing well with tree trimming, but more information should be provided to the public about property rights. Good communication with FPL, but improvement on the removal of problem trees should be made. New construction policy requires electrical line to be underground, and there should be communication with FPL on connection. Critical infrastructure was not previously identified to FPL, but this should be done in the future. Great communication at the EOC level.
02/07/2018	City of Dunedin	Utility should remove trees/palms listed on Florida Exotic Pest Plant Council list, and use proper trimming techniques. Utility should provide notice of when and where trimming will occur, and issue information on proper plants below power lines. Ordinance requires new construction to be underground, but it would be helpful to establish metrics for where conversion to underground should occur. There were challenges with extent of the outages, response times, and communication during restoration with DEF. Suggested that representatives are provided to local EOCs.
02/09/2018	Town of Belleair	Would like to see area risk assessments from DEF and consistent tree trimming. More proactive communication from DEF of when they will be in an area, what they are planning, and what work was completed. Suggested having an area administrator or a single point-of-contact. DEF should provide a more active role in undergrounding, and a set amount of area that is set up for undergrounding. More proactive communication on critical facilities and better information on restoration (DEF did not meet set restoration deadline).

Date	Stakeholder	Summary of Comments
02/12/2018	St. Johns County	Suggested enacting a program for local and state agencies to notify utilities of problem trees and vegetation areas. Currently have policy/practice in place for new construction, which is to require undergrounding. FPL is implementing county wide hardening projects, which is a much cheaper alternative than undergrounding. Communication between county and utility is critical for new projects to discuss subjects such as cost sharing. Currently good communication and coordination with both FPL and JEA at EOC.
02/15/2018	City of Wilton Manors	There should be an aggressive, proactive schedule for tree trimming and notification of when/where trimming is occurring. FPL should devise a plan to transition overhead to underground, and complete a cost benefits analysis. City should have a part in the process of updating and maintaining a list of critical facilities, and communication could be improved. Also, there was no way for the city to report outages to FPL, so there should be more technology resources for tracking restoration efforts.
02/19/2018	City of Monticello	Suggested no change to vegetation management as the city does not believe it was a contributing factor to outages. However, the staging of repair equipment prior to storm by DEF could be improved. Action by legislature and/or PSC for promoting undergrounding (ex. possible monetary incentives from the state). Suggested continued improvements with local DEF representative, and more accurate post storm information.
02/19/2018	Citrus County Public Works	Suggested providing notifications to utility if tree trimming or removal is needed, and facilitating undergrounding with County ordinances and state statues. More proactive interaction at EOC prior to, during, and after storm event.
02/20/2018	City of Rockledge	Suggested implementing a survey to list potential trimming or tree removal, and joint meetings on potential problem areas. For undergrounding, explore shared costs by grant funding. Communication of real time events was lacking; therefore, utility representative(s) should have contact with field representatives and management for plan of action. It would be beneficial to have a representative in each Brevard County EOC.
02/21/2018	City of Sarasota	Currently have close coordination with FPL on vegetation management, and should continue to have utility review and comment on ordinances and code changes. Suggested providing incentives for undergrounding. Potential problems may arise due to limited spots on priority list; therefore, criteria should be established to prioritize critical facilities. Suggested having designated FPL crew for the city to remove their power lines, so the city crews can make repairs to infrastructure.
02/22/2018	Marion County Utilities	Suggested that each electric utility should have a website with a critical infrastructure list, dedicated outage phone number for critical facilities (rather than consumer outage phone number), and better communication with all utilities to address issues.

Appendix B.
Peak Number of Account Outages

	Hermine		Matthew		Irma		Nate	
	Peak Accounts Out	% of Accounts Out	Peak Accounts Out	% Accounts Out	Peak Accounts Out	% Accounts Out	Peak Accounts Out	% Accounts Out
Alachua	30,065	24.9%	5,796	4.8%	68,557	52.7%	2	0.0%
Baker	3,810	34.4%	4,527	40.8%	10,731	94.4%	0	0.0%
Bay	116	0.1%	18	0.0%	3,533	3.1%	388	0.3%
Bradford	2,285	23.3%	4,757	48.5%	12,010	94.9%	0	0.0%
Brevard	2,921	1.0%	196,729	64.6%	268,343	86.4%	0	0.0%
Broward	420	0.0%	12,340	1.3%	709,360	76.0%	0	0.0%
Calhoun	0	0.0%	0	0.0%	1,018	25.9%	0	0.0%
Charlotte	200	0.2%	220	0.2%	73,230	63.7%	0	0.0%
Citrus	15,375	16.0%	1,317	1.4%	69,269	79.0%	0	0.0%
Clay	6,000	4.2%	33,965	23.5%	74,424	78.5%	0	0.0%
Collier	110	0.0%	400	0.2%	236,141	96.0%	0	0.0%
Columbia	9,605	29.7%	2,953	9.1%	30,734	92.1%	0	0.0%
Desoto	10	0.1%	10	0.1%	15,627	88.9%	0	0.0%
Dixie	4,853	48.8%	290	2.9%	7,540	75.3%	0	0.0%
Duval	8,500	2.1%	253,725	61.5%	257,261	57.2%	0	0.0%
Escambia	27	0.0%	0	0.0%	1,421	0.9%	5,384	3.4%
Flagler	370	0.7%	57,016	100.0%	52,746	90.9%	0	0.0%
Franklin	2,264	22.5%	172	1.7%	5,869	57.5%	0	0.0%
Gadsden	9,747	44.0%	0	0.0%	14,998	67.2%	0	0.0%
Gilchrist	5,370	61.2%	590	6.7%	7,029	79.0%	0	0.0%
Glades	0	0.0%	10	0.1%	6,272	86.5%	0	0.0%
Gulf	540	5.0%	83	0.8%	4,198	38.5%	0	0.0%
Hamilton	5,864	87.9%	255	3.8%	5,249	78.2%	0	0.0%
Hardee	0	0.0%	26	0.2%	11,976	97.4%	0	0.0%
Hendry	10	0.1%	10	0.1%	18,750	100.0%	0	0.0%
Hernando	5,514	6.1%	117	0.1%	58,644	61.8%	0	0.0%
Highlands	128	0.2%	472	0.8%	62,010	99.3%	0	0.0%
Hillsborough	17,956	2.8%	262	0.0%	265,542	42.0%	0	0.0%
Holmes	0	0.0%	0	0.0%	1,254	12.0%	77	0.7%
Indian River	60	0.1%	59,244	67.2%	73,311	80.1%	0	0.0%
Jackson	0	0.0%	0	0.0%	11,092	42.4%	0	0.0%
Jefferson	5,762	71.5%	107	1.3%	6,092	75.1%	0	0.0%
Lafayette	2,965	71.5%	199	4.8%	3,676	90.9%	0	0.0%
Lake	1,699	1.0%	16,849	10.0%	123,954	69.7%	0	0.0%
Lee	50	0.0%	400	0.1%	361,999	82.5%	0	0.0%
Leon	94,088	65.6%	2	0.0%	59,821	42.2%	0	0.0%
Levy	10,007	41.2%	254	1.0%	17,932	72.6%	0	0.0%
Liberty	438	13.5%	0	0.0%	3,303	81.2%	0	0.0%
Madison	7,278	69.0%	69	0.7%	7,171	67.0%	0	0.0%
Manatee	2,290	1.1%	113	0.1%	132,455	63.1%	0	0.0%
Marion	11,525	6.3%	27,389	14.9%	143,485	75.9%	0	0.0%
Martin	40	0.0%	44,600	48.1%	76,120	81.5%	0	0.0%
Miami-Dade	400	0.0%	16,850	1.5%	919,340	80.9%	0	0.0%
Monroe	0	0.0%	0	0.0%	52,855	84.4%	0	0.0%
Nassau	3,052	11.1%	19,092	43.5%	43,740	97.6%	0	0.0%
Okaloosa	2	0.0%	45	0.0%	323	0.3%	6,382	5.9%
Okeechobee	100	0.5%	1,680	7.7%	21,990	96.5%	0	0.0%
Orange	685	0.1%	69,231	12.3%	362,088	62.4%	0	0.0%
Osceola	306	0.2%	7,321	5.7%	55,352	36.2%	0	0.0%
Palm Beach	30	0.0%	58,870	7.7%	566,250	73.8%	0	0.0%
Pasco	10,213	3.9%	472	0.2%	190,567	70.6%	0	0.0%
Pinellas	24,179	4.4%	1,111	0.2%	434,037	78.6%	0	0.0%
Polk	535	0.2%	1,306	0.4%	216,839	65.6%	0	0.0%
Putnam	1,011	2.5%	27,393	66.8%	36,634	88.8%	0	0.0%
Santa Rosa	0	0.0%	0	0.0%	259	0.3%	1,712	2.2%
Sarasota	3,570	1.4%	280	0.1%	174,672	66.2%	0	0.0%
Seminole	184	0.1%	68,597	33.1%	158,065	75.1%	0	0.0%
St. Johns	1,140	1.3%	78,610	89.6%	107,130	81.9%	0	0.0%
St. Lucie	150	0.1%	57,477	38.3%	113,280	73.6%	0	0.0%
Sumter	2,643	3.9%	1,307	1.9%	28,598	38.9%	0	0.0%
Suwannee	11,493	52.9%	1,300	6.0%	20,991	92.2%	0	0.0%
Taylor	8,742	67.9%	138	1.1%	9,665	74.8%	0	0.0%
Union	990	19.0%	920	17.7%	4,695	86.3%	0	0.0%
Volusia	635	0.2%	257,718	92.0%	222,328	77.6%	0	0.0%
Wakulla	14,009	93.0%	153	1.0%	11,513	74.5%	1	0.0%
Walton	3	0.0%	0	0.0%	139	0.2%	613	1.0%
Washington	0	0.0%	0	0.0%	605	4.6%	29	0.2%
Totals	323,505	3.2%	1.13M	11.0%	6.52M	62.1%	13,539	0.1%

Source: State EOC power outage reports

Appendix C.
Utility Reported Weather Data - Hurricane Hermine

County	Maximum Sustained Wind (MPH)	Maximum Gusts (MPH)	Maximum Rainfall (inches)	Maximum Storm Surge (Feet)
Alachua	34	52	4.85	-
Baker	32	50	-	-
Bay	35	69	2	-
Bradford	32	50	-	-
Brevard	26	39	-	-
Broward	19	29	-	-
Calhoun	30	64	-	-
Charlotte	30	45	4.47	-
Clay	39	60	2.02	0.73
Collier	25	38	-	-
Columbia	34	52	-	-
Desoto	24	36	-	-
Dixie	-	48	-	7.3
Duval	41	61	2.53	1.4
Flagler	34	51	-	-
Franklin	-	58	4.41	-
Gadsden	60	64	4	-
Glades	20	30	-	-
Gulf	-	79	-	-
Hamilton	-	-	3.15	-
Hardee	24	36	-	-
Hendry	21	31	-	-
Highlands	21	31	3.28	-
Hillsborough	36.8	57.5	7	4.2
Indian River	21	32	-	-
Jackson	30	64	-	-
Jefferson	75	90	7	6.1
Lafayette	-	-	6.1	-
Lee	29	43	1.49	-
Leon	60	70	6	-
Levy	-	-	-	6.2
Liberty	30	64	-	-
Madison	65	80	7	-
Manatee	38	57	10	-
Marion	33	45	6.18	-
Martin	21	32	-	-
Miami-Dade	21	32	-	-
Monroe	29	44	-	-
Nassau	37	64	-	-
Okeechobee	20	29	-	-
Orange	25	37	3.5	-
Osceola	22	34	3.25	-
Palm Beach	21	32	-	-
Polk	29.9	41.4	-	-
Putnam	36	55	-	-
Sarasota	35	53	10.71	-
Seminole	24	37	-	-
St. Johns	39	60	0.84	0.61
St. Lucie	21	32	-	-
Sumter	-	-	3.27	-
Suwannee	41	62	4.52	-
Taylor	75	90	7	8.6
Union	32	48	-	-
Volusia	32	49	-	-
Wakulla	65	75	5.81	6.3

Source: Utilities' responses to staff's first data request, No. 27.

Appendix D.
Utility Reported Weather Data - Hurricane Matthew

County	Maximum Sustained Wind (MPH)	Maximum Gusts (MPH)	Maximum Rainfall (inches)	Maximum Storm Surge (Feet)
Alachua	35	60	1.49	-
Baker	30	46	-	-
Bradford	40	65	6	-
Brevard	80	121	17.01	4.09
Broward	39	60	1.61	-
Calhoun	39	87	7	-
Charlotte	26	39	-	-
Clay	44	68	10.3	3.77
Collier	26	40	-	-
Columbia	26	40	-	-
Desoto	20	30	-	-
Duval	61	88	9.63	4.69
Flagler	68	102	6	6
Glades	30	45	-	-
Hardee	23	34	-	-
Hendry	30	42	-	-
Highlands	29	43	-	-
Indian River	64	97	13.85	-
Jackson	39	87	7	-
Lake	31	48	5.22	-
Lee	26	40	-	-
Leon	23	30	-	-
Liberty	39	87	7	-
Manatee	30	45	-	-
Marion	23	39	3	-
Martin	61	92	4.18	-
Miami-Dade	31	48	-	-
Monroe	30	46	-	-
Nassau	45	87	7	7
Okeechobee	34	50	-	-
Orange	48	73	6.17	-
Osceola	49	69	0.03	-
Palm Beach	49	75	-	-
Pinellas	24.2	40.3	-	-
Polk	36	44	-	-
Putnam	48	74	-	-
Sarasota	29	43	-	-
Seminole	47	72	8.99	-
St. Johns	73	109	9.97	8.39
St. Lucie	71	100	13.85	-
Suwannee	24	37	-	-
Union	29	45	-	-
Volusia	72	109	7.75	-

Source: Utilities' responses to staff's first data request, No. 27.

Appendix E.
Utility Reported Weather Data - Hurricane Irma

County	Maximum Sustained Wind (MPH)	Maximum Gusts (MPH)	Maximum Rainfall (inches)	Maximum Storm Surge (Feet)
Alachua	64	99	13.07	-
Baker	65	100	9.76	-
Bay	34	46	1.5	-
Bradford	62	96	15	-
Brevard	75	114	13.74	4.2
Broward	83	127	9.72	2.7
Calhoun	50	71	12	-
Charlotte	70	104	-	4
Citrus	-	64	10.65	-
Clay	73	112	11.32	5.97
Collier	115	144	14.98	6.5
Columbia	62	95	9.63	-
Desoto	77	100	-	-
Dixie	-	56	-	-
Duval	89	136	11.11	6.44
Escambia	30	42.6	0.25	-
Flagler	64	97	9.83	4.19
Franklin	-	50	-	-
Gadsden	50	55	2	-
Gilchrist	-	-	6.68	-
Glades	71	106	8.38	-
Gulf	-	45	1	-
Hamilton	-	-	-	-
Hardee	100	111	12	-
Hendry	80	102	10.31	-
Hernando	-	-	7.67	-
Highlands	70	103	10.95	-
Hillsborough	56	68	16.08	3.1
Holmes	23	37	2	-
Indian River	75	116	14.15	3
Jackson	50	71	12	-
Jefferson	-	60	3	-
Lake	43	69	11.59	-
Lee	72	110	9.02	6
Leon	43	55	2	-
Levy	-	55	8.07	-
Liberty	50	71	12	-
Madison	-	62	4	-
Manatee	80	122	-	-
Marion	-	51	13.24	-
Martin	79	119	10.53	-
Miami-Dade	85	127	8	6
Monroe	120	160	12.54	8
Nassau	89	135	12.7	7.8
Okaloosa	27.7	42.5	1	-
Okeechobee	72	107	-	-
Orange	71	110	12.36	-
Osceola	70	108	10.61	-
Palm Beach	85	127	10.35	2.7
Pasco	-	55	9.83	-
Pinellas	49.4	88	5.6	2.17
Polk	115	130	11.1	-
Putnam	59	91	-	3.6
Santa Rosa	28.9	40.3	0.75	-
Sarasota	72	108	8	-
Seminole	66	101	12.14	-
St. Johns	79	121	10.22	5.61
St. Lucie	84	127	21.66	-
Sumter	70	75	11.3	-
Suwannee	58	88	-	-
Taylor	-	48	4	1
Union	62	95	-	-
Volusia	78	116	12.55	-
Wakulla	35	56	2	0.7
Walton	25.3	33	1.5	-
Washington	10	27	2	-

Source: Utilities' responses to staff's first data request, No. 27.

Appendix F.
Utility Reported Weather Data - Hurricane Nate

	Maximum Sustained Wind (MPH)	Maximum Gusts (MPH)	Maximum Rainfall (inches)	Maximum Storm Surge (Feet)
County	Max	Max	Max	Max
Bay	38	50	2	-
Escambia	50	85	5	5
Franklin	29	37	0.18	4
Gulf	25	34	0.2	3
Holmes	-	-	2	-
Jackson	25.3	33.4	0.75	-
Leon	25	31	0.52	-
Okaloosa	45	65	10	-
Santa Rosa	52	85	8	5
Walton	40	60	4	-
Washington	8	17	2	-

Source: Utilities' responses to staff's first data request, No. 27.

II. Outside Persons Who Wish to Address the Commission at Internal Affairs

OUTSIDE PERSONS WHO WISH
TO ADDRESS THE COMMISSION AT

INTERNAL AFFAIRS
June 19, 2018

Speaker	**Representing**	**Item #**
Patricia A. Christensen	Office of Public Counsel	1

III. Supplemental Materials for Internal Affairs

Parties/Staff Handout
Internal Affairs Agenda
on 6/19/18
Item No. 1

Draft Suggestions

Under Key Findings

- Data collected during and after the storms show no anomalies between utilities regarding outage causes and restoration times. Florida's aggressive hardening programs appear to be working, as fewer poles were replaced compared to ~~work. The length of outages has been reduced markedly from~~ the 2004-2005 storm seasons.

- Hardened overhead distribution facilities had substantially lower failure rates than non-hardened facilities. Very few transmission structure failures were reported.

- Underground facilities had minimal failure rates compared to overhead facilities.

- ~~For the three largest IOUs, 37.6%~~ Approximately 40% of distribution lines are underground for the three largest IOUs. Underground ~~line is~~ facilities are being added at an average rate of 440 miles per year.

- Despite substantial and measurable improvement, customers who provided comments were dissatisfied with the extent of outages and restoration times. The public~~'s~~ has high expectations for reliable service and ~~are rising, indicating resilience and~~ prompt restoration ~~will have to continually improve~~.

- ~~Years of~~ Utility trimming programs ~~have~~ annually removed vegetation ~~intruding into~~ within the utilities' right of way. However, ~~now~~ the primary cause of outages ~~was~~ continues to be vegetation and other debris coming from outside the rights of way, where utilities typically don't have access to trim.

- In some instances, estimates of r~~R~~estoration time ~~estimating~~ proved inaccurate, and consumer communication systems were overwhelmed causing ~~s failed under stress, causing significant~~ additional dissatisfaction.

- Some local governments voiced a need for better coordination and communication with utilities during storms.

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JOE NEGRON
President of the Senate

J.R. KELLY
Public Counsel

RICHARD CORCORAN
Speaker of the House of Representatives

June 12, 2018

Ms. Carlotta S. Stauffer
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Re: Review of electric utility hurricane preparedness and restoration activities, Docket No. 20170215-EU

Dear Ms. Stauffer:

This letter is being filed in the above referenced matter in response to a request made by Commissioner(s) at the May 2, 2018 electric utility hurricane workshop. The Office of Public Counsel (OPC) was asked to provide suggestions regarding the process to review storm hardening costs associated with implementing a utility's storm hardening plan approved by the Commission pursuant to Rule 25-6.0342, F.A.C. See, Transcript, Vol. 3, pp. 280-283. Specifically, OPC was asked to provide comments relating to the review of: (1) the amount of rates applicable to storm hardening activities; (2) how the money was spent; and (3) if there is a way to review these costs and expenditures on a yearly basis, or some other mechanism. Upon consideration of the questions raised regarding how to improve the storm hardening review process related to tracking costs, OPC offers the following procedural recommendations:

I. The Commission should require utilities to file an annual report to include the following information:
   - Consistent with the utility's Commission approved storm hardening plan pursuant to Rule 25-6.0342, F.A.C., each utility should identify the storm hardening costs embedded in base rates by category such as vegetation management, pole inspections, pole replacement/undergrounding, and other annual activities related to the utility's approved plan.

- For each category of costs (such as vegetation management), the utility should indicate what activities are included in base rates and the cost level of each activity (such as tree trimming cycle).
- For each category of costs, the utility should identify the budgeted amount for each category of cost by activity for the past three years and the current year designed to implement the utility's approved storm hardening plan.
- For each category of costs, the utility should identify the actual amount spent on each category of costs by activity for the past three years and the current year to date.
- The utility should explain any variance between the budgeted amounts and actual expenditures for each category by activity that are greater than 10% in a particular year.
- The utility should explain any variance between the level of storm hardening activities in the utility's approved storm hardening plan and the level of those activities for the past three years.

II. As part of its annual review of storm hardening activities, the Commission should review the above report to ensure that the utilities are spending the monies embedded in base rates in accordance with the filed and approved storm hardening plans.

With this additional information, the Commission will have the data necessary to identify any discrepancies between Commission approved storm hardening costs and activities and actual annual implementation of the storm hardening plans during the annual storm hardening review. Moreover, the Commission and other interested persons will have additional and useful "starting point" information to see how storm hardening activities are progressing and how storm hardening funding was spent.

OPC appreciates the opportunity to provide suggestions on how to improve the overall usefulness of the annual storm hardening review.

Sincerely,

Patricia A. Christensen
Associate Public Counsel

PC/pp

cc: All Commissioners
Braulio Baez
Tom Ballinger
All Parties of Record

IV. Transcript

BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

PROCEEDINGS: INTERNAL AFFAIRS

COMMISSIONERS PARTICIPATING: CHAIRMAN ART GRAHAM
COMMISSIONER JULIE I. BROWN
COMMISSIONER DONALD J. POLMANN
COMMISSIONER GARY F. CLARK
COMMISSIONER ANDREW GILES FAY

DATE: Tuesday, June 19, 2018

TIME: Commenced: 9:30 a.m.
Concluded: 12:18 p.m.

PLACE: Gerald L. Gunter Building
Room 105
2540 Shumard Oak Boulevard
Tallahassee, Florida

REPORTED BY: ANDREA KOMARIDIS
Court Reporter and
Notary Public in and for
the State of Florida at Large

PREMIER REPORTING
114 W. 5TH AVENUE
TALLAHASSEE, FLORIDA
(850) 894-0828

P R O C E E D I N G S

CHAIRMAN GRAHAM: Good morning, everyone.

THE AUDIENCE: Good morning.

CHAIRMAN GRAHAM: I have 9:30 on Tuesday, June the 19th. And this is our internal affairs meeting. So, let us -- let's start the meeting. At the top of the agenda, we have the review of the Electric Utility Hurricane Preparedness and Restoration Acts, the draft report.

Who's going to kick me off?

MS. KNOBLAUCH: That would be me. Emily Knoblauch for staff. On October 3rd, 2017, the Commission opened Docket No. 20170215-EU, to review hurricane preparedness and restoration action of Florida's electric utilities.

The purpose of the review was to identify potential areas where infrastructure damage, outages, and restoration time for customers can be minimized in the future. Staff collected data requests from all 57 utilities in the state and sought input from customers and other stakeholders.

On May 2nd and 3rd, 2018, the Commission held a workshop to further explore the preparedness and restoration actions of Florida's electric utilities.

Item 1 is to discuss language which provides review of electric utility hurricane preparedness and restoration activities. Staff is seeking direction regarding the draft language to close Docket No. 20170215-EU.

Staff also recommends that the Commission initiate the following action: First, open storm-hardening plan-review dockets for all investor-owned utilities and direct staff to gather additional information regarding coordination with local governments, staffing practices at local emergency operations centers, preparation and response to roadway congestion and fuel availability, and alternatives that were considered to propose or to propose projects.

In addition, we are asking the Commission to direct staff to initiate two management audits; one to examine how investor-owned utilities estimate and disseminate outage-restoration times; and the second, to examine utility inspection and maintenance schedule of transmission structures.

MR. BALLINGER: And with that, Commissioner, we're ready to take questions or -- or answer any of the information we have. We are dealing with a draft that was provided, I guess, it was Friday,

end of the docket.

CHAIRMAN GRAHAM: Sounds --

MR. BALLINGER: And that's the draft we will be working from.

CHAIRMAN GRAHAM: Okay.

MR. BALLINGER: So, if you have a page reference or something like that, that may help, too.

COMMISSIONER BROWN: But you have both of them.

MR. BALLINGER: Yes. Yes.

COMMISSIONER BROWN: Good.

CHAIRMAN GRAHAM: Commissioners, I have to apologize. I have to apologize. After reading the -- the original draft that we had, my office -- Jim Varian -- decided there were some changes that needed to be made. And I -- I think he was right.

And so, that's why you have a different executive summary and, I think, Section 5, but other than that, everything else is pretty much as staff has written.

So, who wants to kick us off?

COMMISSIONER BROWN: Mr. Chairman, I want to thank you all for taking the initiative of revising it. I thought that the report was lacking certain

information. And I think you beefed it up a little bit more, but I think we still need to consider certain areas a little bit more thoroughly. So, if we can talk about some of the issues that -- and findings that we have.

CHAIRMAN GRAHAM: Uh-huh.

COMMISSIONER BROWN: First, starting back to 2007, the 2007 report actually made recommendations to Legislature. They list -- we listed three recommendations. And I think this report should also do the same; not necessarily three, but based on the discussion, hopefully we'll come up with some recommendations.

This report does not have any recommendations, right, Tom?

MR. BALLINGER: Correct. We debated this in-house. We thought the report should stand on its own without it, and that the -- the recommended actions are -- after this is what the Commission is directing staff to do because that past report, in '07, was directed by the Legislature to give them recommendations.

This report was your own initiative to review. And that's why we thought it might be better just to have the report stand by itself, without the

recommendations, because we weren't sure what you would do. And that's why the -- the memo was separate from the report.

COMMISSIONER BROWN: Got it.

MR. BALLINGER: So, that -- there were slightly-different settings that we were in.

COMMISSIONER BROWN: Is there any information in the new proposed report that you need -- that was deleted from the prior report that needs to be included? Like the appendices.

MR. BALLINGER: We -- we've gone over it a bit. There's some tweaks. I think the appendices probably would be helpful.

Again, we -- we approach the old report, I'll call it, as factual to -- here's the data-gathering that we got and here's the -- the data that supported it and told the story.

COMMISSIONER BROWN: Well, I think that's a very important part -- point to make because I think that we do need to be very clear of the findings of fact and include those in the summary. And I think the -- I think the report does that.

I do think we need to tweak it a little bit because it was clear from the -- from the data that we gathered that, you know, hardened facilities

perform better than underground facilities -- pardon me. Hardened facilities performed better than non-hardened facilities.

And there were fewer outages for undergrounding than there were for overhead; as well as, the amount of time to restore all customers has decreased compared to previous storms.

I think those findings of fact need to be very clear in the report and in the letter that accompanies the report. Would you agree?

MR. BALLINGER: If you all want to put it in the report, we can put it in the report. That's fine. That was the structure we -- we approached doing this, to leave it more generic and more fact-based. And then whatever directed actions you gave to staff or transmittal letter that you would put onto the report could elaborate your findings there.

COMMISSIONER BROWN: Findings of fact -- okay.

MR. BALLINGER: So, we kind of left it to the Commission to decide what the facts told them, if you will.

COMMISSIONER BROWN: Thank you, Tom.

Commissioners?

COMMISSIONER CLARK: I want to tag -- tag on

to that question, if you don't mind because, I guess, Tom, my question is: Is your concern about drawing a conclusive finding of fact -- your concern about not drawing that conclusion is based off of, I guess, the severity of the storm.

For example, examination of how underground performed versus overhead -- maybe that's a direct result of the type of storm we had. If it had been a higher flooding event, maybe it would have had different results. If it had more rainfall, higher wind speeds, maybe we would have seen a different result.

Is that -- is that staff's concern?

MR. BALLINGER: Correct. I think the -- my caution is -- comparing past storms and performance now is that each storm is so different. And I -- I hesitate to draw a conclusion based on that. I can't --

COMMISSIONER BROWN: We can always use the word "generally."

MR. BALLINGER: Yes. But we do have data on performance of facilities, damage of facilities. Again, different storms, but it at least gives you something there.

Outage time can be driven by a multitude of

things. Either the infrastructure or road traffic or things of that nature could hamper restoration time. So, again, you don't know -- in comparing just that number alone could be problematic. So, that's why we were -- we were -- it's hard to draw that absolute conclusion. I mean, to be quite frank --

COMMISSIONER BROWN: Well, Tom, look- -- you looked at four storms, though, and the -- from my reading of the report --

MR. BALLINGER: Right.

COMMISSIONER BROWN: -- those were clear findings of fact.

MR. BALLINGER: The way staff approached that was look at the storms to look for anomalies; were there unique circumstances of storms or did also the industries behave in a similar pattern.

Remember, our hardening standards go to the IOUs; not to the munis and co-ops. So, we looked at their response as well; is there anything unique between industries, things of that nature. Those were the kind of things we were looking for.

The purpose was to look at where can we tweak our processes, where can we tweak utilities' measures to help restoration time. So, we were

looking for, I call them, pinch points, if you will, throughout the process.

COMMISSIONER BROWN: Okay.

COMMISSIONER POLMANN: Thank you, Commissioner.

If we may -- if I may comment, I want to go back to the -- to the introduction Ms. Knoblauch made. And this is stated, I believe, in the executive summary.

I appreciate your -- your distinction between the technical aspect in the report and what this report would be used for. And I would like to make the distinction between the staff effort and the -- the Commission's effort, which will evolve here from the discussion today.

I see the staff effort as being largely a technical -- a technical effort. Excuse me. And if I understand the -- the origins of the docket, the instant case here, the effort in just reading the words is reviewing electric utility preparedness and restoration actions identify potential areas where infrastructure, damage, outage, and recovery time could be minimized in the future.

In essence -- and I'll say it this way: It's

a fairly-simple question in the sense of what happened -- what were the improvements -- what's the result of efforts over the -- say, the past ten years. There was an evaluation and -- and some direction from 2007. And we have the 2016-'17 storms. And so, how do utilities perform. Very straightforward.

But -- but the effort is not an easy one. There's so much information that was gathered. And, as Ms. Knoblauch stated, 57 utilities -- we always think of -- of four major IOUs, but a big storm across the whole state, recently -- they had a tremendous job to do. And I really applaud them for -- for bringing that all together in, you know, such a comprehensive effort.

And your reference to the appendices is critical. I think all of that should be in there. I support the idea of a -- of a staff report being a technical effort, bringing all -- all the facts together. And I would like to see a report that has everything in it.

And then, if we could -- and I'm not quite sure how to bring all this together -- to have a front piece that's more from our discussion here today, make -- including an executive summary and

including -- you know, if this is going to be something we distribute widely to policymakers, you know, a cover letter. Maybe an executive team puts that together and -- and evolves from our discussion here today.

If there's policy issues, I -- I would like to have staff have a chance to take some direction here on the technical matters and what do we want a report to look like on -- on the technical issues and all the data and all the effort that they -- they put in. I think we could have some discussion here in what currently is -- is this -- this front effort with the actions, the key findings.

But looking back, you know, I think the public is saying, well, you know, we had this experience. Well, how did -- how did the utilities perform. What's our assessment of that. You know, there was a -- a lot of discussion in the media, a lot of folks. We had a workshop. We heard a lot about that. And so, how do we bring that together, what's our evaluation, what's commissioner's evaluation as opposed to all the data they collected.

I don't want to belabor that, but that's kind of the big picture, the flyover. And I would like

to hear some comments from the Commissioner- -- Commission in terms of the -- the format, the distinction between the facts and the data, and then the direction and the policy and the next steps.

Thank you.

CHAIRMAN GRAHAM: Well, first of all, I guess I'll apologize for the confusion. Our -- the purpose of the second draft wasn't to eliminate the definitions and the appendices. And that's not --

COMMISSIONER POLMANN: Oh, no, I --

CHAIRMAN GRAHAM: We just -- we left it off because we weren't touch- -- we weren't touching or changing it. I mean, so, that was always -- in my opinion, was always going to be included.

The only things -- the only things that my office changed, once again, was the executive summary and we added the Section 5. And I just thought Section 5 was a very critical thing.

COMMISSIONER BROWN: I agree.

CHAIRMAN GRAHAM: That one -- that's the one that specifically dove into underground and overground. And that seems like one of the things we talked the most about. And so, I thought it had to be there.

Commissioner Brown.

COMMISSIONER BROWN: Thank you, Mr. Chairman. And thank you for pointing that out, too, because I think Section 5 is important to be included in this report.

And to Commissioner Polmann's points of the technical summary -- well, like you're saying, you know, people are asking -- the workshop -- we heard from various stakeholders. They want to know, how did the utilities perform. So, I think it is very important to get to that finding.

These findings of fact are a critical part of the overall report because that's what -- that's what residents want to know. That's what various stakeholders want to know. That's what policymakers want to know. So, we have to get to that point in this report.

I -- I'm not opposed to putting in our own recommendations in a separate cover letter or -- or in a different section of the report. I think it should be in the report, though, our recommendations and -- our report should include findings, but also ways to improve.

And there are definitely ways that can improve. And we can elaborate after the other

Commissioners have had a chance to talk.

CHAIRMAN GRAHAM: It's funny, one my old bosses used to say -- if he read -- he read the report and it had no recommendations, he said, so what, what are you telling me. And so, I said you're right, it definitely needs to be there.

Braulio.

MR. BAEZ: Excuse me. I -- I don't think there is any problem -- it was really an editorial decision. You heard what the thinking was behind that, but I don't think that there is any -- any problem whatsoever to actually include the -- the recommendations within the body of the report. That's -- that's not a problem.

COMMISSIONER BROWN: Great.

CHAIRMAN GRAHAM: Yep.

Well, I'm going to dig in a little. If I could get you guys to turn over to Page 27.

COMMISSIONER FAY: The new or the old?

COMMISSIONER BROWN: New one?

CHAIRMAN GRAHAM: New one.

MR. BAEZ: Mr. Chairman -- and -- and first of all, I apologize for running a little -- a little behind, but for -- for -- for clarity's sake, I mean, are we going to be working off this -- the

latest draft?

CHAIRMAN GRAHAM: For clarity, we're just going --

MR. BAEZ: Was -- we're working --

(Simultaneous speakers.)

CHAIRMAN GRAHAM: For clarity, we'll work off the latest --

MR. BAEZ: Thank you.

CHAIRMAN GRAHAM: Latest draft. And if we need to incorporate anything from the first draft, we'll --

MR. BAEZ: Yeah, if there's reference -- thank you.

CHAIRMAN GRAHAM: As I said before, one of the things that -- I mean, we talked about that -- the workshop talked about, and everybody seems to be fixating on, is underground and overground. And one of the things that I saw from this data here, transition poles -- transmission poles, rather -- as you see, that first chart under Florida Power & Light, it says they only had to replace five transmission poles; is that correct?

MR. BALLINGER: Five wooden poles.

CHAIRMAN GRAHAM: Five wooden poles. And if you go down, two of those charts to the underground

versus overground -- basically, overground was .1 miles and underground was zero replacement?

MR. BALLINGER: For transmission? Yes.

CHAIRMAN GRAHAM: Now, I can see the impact that overground and underground makes with the distribution poles, but I don't see it with the transmission side of things. And I guess my first question to staff -- and that's under Florida Power & Light.

And if you go over to Duke, it's the same thing, where the transmission poles -- the hardened poles were zero. The unhardened poles were 139, but if you look at overground versus underground -- both being zero.

MR. BALLINGER: It's -- I think it's a factor of the underground transmission is such a small number of miles, it probably wasn't impacted. I mean, the -- when you think of an entire state, they -- for FPL, they're reporting 105 miles of underground transmission. That's -- that's a nit. So, that may be why those numbers came out so low.

CHAIRMAN GRAHAM: I don't know. 105 miles seems like a lot.

MR. BALLINGER: Compared to 6,000 some, it's a small percentage of it.

CHAIRMAN GRAHAM: The same thing with the -- the last one, Tampa, zero -- I mean, I agree with the focus that we need to figure out how we're going to do more underground-ing of distribution stuff, but I guess the conversation I want to have with my Commissioners and with you guys is, is it necessary to do more of that with the -- with the transmission side of things.

I mean, because you're talking about putting a whole lot of voltage underground. And the cost is just -- it's pretty huge. And I don't know if we're going to get the bang for our buck doing that on the transmission side of things as we would more on the distribution side of things. And that was a question.

MR. BALLINGER: I don't know that I know the answer. I do agree with you that transmission underground is a lot more expensive. I don't know that the data here shows the need to go there.

See, this -- this data came in late April, we got this. Those are good questions to follow on and to explore, but the general rule is it is very expensive to underground transmission. And I think that you see the performance of the overhead performed well, especially the hardened structures.

In the transmission arena, what troubled staff or -- or drew attention was in the Duke scenario with the rusted transmission tower. And you know, that's why we're recommending the management audit to look at the inspection practices and maintenance for that because that's something that we think should be -- should have been caught, should have been made aware of.

So, you know, the structures are built to withstand severe winds, things of that nature, so...

CHAIRMAN GRAHAM: Well, and that's probably the other -- the other point I want to get to is I think we need to be more standardized with the information coming in. I mean, one utility is going to give us the data that they have it. Another utility is going to give us the data the way -- the way they have it. And another one, once again -- and for us to be able to compare apples-to-apples, I think we should be getting the same data from everybody.

MR. BALLINGER: I would --

CHAIRMAN GRAHAM: And so, I guess, if we had -- if we had more of a standardized request, then we'd have the same standardized answers coming

in all the time.

MR. BALLINGER: I would agree, and I -- I would make the suggestion that this data, when it came in, it came in several footnotes of where it is. I would suggest this data as an appendix with those footnotes so it's clear to the reader there may be some differences.

CHAIRMAN GRAHAM: Yeah.

MR. BALLINGER: I don't want -- I don't want to give the impression that these are all apples-to-apples comparisons.

CHAIRMAN GRAHAM: And -- and I agree with you because I -- I've seen when these numbers were being crunched. And a lot of these were square pegs being pounded into round holes.

MR. BALLINGER: Yeah.

CHAIRMAN GRAHAM: And so, there may be some emphasis being lost.

COMMISSIONER CLARK: Mr. Chair?

CHAIRMAN GRAHAM: Yes.

COMMISSIONER CLARK: I would ask that -- does staff have any idea, in the current hardening plans, that the information we've seen -- how much of -- how much of the hardening plans are dedicated to transmission?

I would be very surprised if any of the utilities are focusing their hardening efforts in the transmission arena, other than possibly pole replacement. I -- my assumption --

MR. BALLINGER: That's the bulk of it.

COMMISSIONER CLARK: -- would not be going underground. Probably, of the 105 miles, typically you're going to see, in transmission, that would probably be a lot of water crossings --

COMMISSIONER BROWN: Uh-huh.

COMMISSIONER CLARK: -- right, that use the -- the undergrounds --

MR. BAEZ: Assessment --

COMMISSIONER CLARK: -- in water crossings.

MR. BALLINGER: Right.

MR. BAEZ: Ones -- yeah.

COMMISSIONER CLARK: That's probably not -- not a fair number to look at and say, okay, this 105 miles performed really good. Well, it was under water; probably nothing is going to happen to it there.

MR. BALLINGER: I believe you're correct, Commissioner. The hardening efforts in transmission are replacing wood poles with steel or concrete, is the bulk of it. And I would -- I

hadn't thought about that, but you're probably right with -- the underground would be water crossings and things of that nature.

COMMISSIONER CLARK: And to the Chairman's point, we didn't -- we don't want to see any additional -- we're not looking for additional efforts to convert overhead transmission to underground. That's not cost-effective or would not be considered cost-effective in most cases.

CHAIRMAN GRAHAM: Well, don't get me wrong, I'm just asking that question. I mean, I'm not saying, we're not going to do it anymore. I just want for somebody to say, if there's a justification there, explain it to me because I -- I don't see it from the information we got.

MR. BALLINGER: From a performance perspective, what you're seeing is not a big difference, yeah.

MR. FUTRELL: Mr. Chairman, if I may -- one of the suggestions -- and I know we'll get into the recommended actions. One of the proposals staff is putting forward is -- within the storm-hardening-plan dockets is to have information to evaluate storm-hardening projects and look at what -- alternatives that may have been looked at.

So, if, for example, there are storm-hardening projects associated with transmission, that's something that, perhaps, staff could inquire about in that context is, did you look at underground-ing transmission. If not, what are the pros and cons and cost and benefits of that kind of proposal, versus, as I said, replacing wood poles with concrete and steel.

So, that's kind of a -- where that kind of concept could be -- could be further explored, is in the storm-hardening-plan dockets.

CHAIRMAN GRAHAM: And the only reason I brought this up first is because the message that I've gotten from our workshop and from you just -- things you hear people say -- they make it sound like underground-ing everything as a panacea is going to fix all the problems. And it may fix quite a few problems, but do we need to underground everything.

And you know, once you start talking about underground-ing a 500 KV line -- I mean, that's just -- it's ridiculous for cost. And you know, anybody that deals with that stuff -- nobody wants to do that because of all of the other hazards that go along with that.

And so, I just want to make sure that -- that we're talking about apples-and-apples here; that we're talking about -- you know, we're -- we're not going to say we're going to -- you know, by 2030, we're going to have everything underground. That's ridiculous.

I mean, but let's just -- let's focus on the things that are going to have the biggest impacts.

Commissioner Brown.

COMMISSIONER BROWN: Thank you. And I think it was stated at the workshop that underground-ing is not the elixir of all of restoration problems that occur post-hurricane, post-storm, any type of outage.

But I do want to know a little bit more about the underground-ing, the data that we got because this was almost a year-long process that we've had. We began it back in October, almost. And it's the first time we've really had an opportunity to delve into the details.

So, did we look at whether there is a downward shift in cost to underground-ing?

MR. BALLINGER: I think you've seen that the Commission, on a periodic basis -- every three years, I think, utilities are required to update

their differential costs, underground to overhead.

And I think, over the years, we have seen a contraction, if you will, of that differential. It's getting closer and closer to parity between the two. In fact, I think TECO had one recently that was zero difference between overhead and underground.

COMMISSIONER BROWN: I remember that.

MR. BALLINGER: We are seeing that more in the new construction. Most of the construct- -- most of the underground-ing is underground, of new construction. Just by default, it's going there naturally. So, we're seeing that. The --

COMMISSIONER BROWN: Some codes require it, right?

MR. BALLINGER: Some codes require it, but developers are doing it and the cost is getting closer and closer. People are willing to do it for esthetics. And it's -- it's moving forward that way.

The problem is -- is still the existing overhead, particularly back-lot lines. You have a couple of utilities who are -- are exploring targeted underground-ing. You heard at the workshop a little bit different forms for each of

them.

But in my mind, those are good, if you will, program studies to go to the uniqueness of underground-ing for each situation; the geographic conditions, the layout, the design of the actual circuit -- are you going to loop it, is it radial, things of that nature. They come into play when you start doing conversion of undergrounds, as opposed to new construction.

And any study I've seen with broad-based underground looking at, it says, okay, underground costs two times more -- let's just say a number -- but there's situations where underground-ing makes sense depending on the geographic, blah, blah, blah -- there's always these caveats that there may be unique circumstances.

COMMISSIONER BROWN: Right.

MR. BALLINGER: So, I think these targeted approaches that utilities are doing will help us gain information on that, what the unique circumstance is. It might be customer acceptance. They may not want the green transformer box in their front yard. Okay. We can't underground this neighborhood, then, until we get by it.

So, I think that approach may be a useful --

useful tool to get information.

COMMISSIONER BROWN: So, the City of Dunedin talked about the conversions to underground. And they asked for us to look at established metrics where -- where conversion to underground should occur. We don't have those metrics in place, currently.

MR. BALLINGER: No. And I think it's very difficult to have a -- a metric to say, if this, this, this happens, that underground-ing makes sense. And I think that's why this targeted approach is going. And it's -- it's approaching it from the standpoint of day-to-day reliability; not as much as storm hardening.

So, the selection of the areas to target are, first, based on the worst-performing laterals. So, you're -- you're going in to improve day-to-day reliability and service to customers.

COMMISSIONER BROWN: In the 2007 report, one of the recommendations to the Legislature was to establish additional planning tools to identify and implement instances where underground-ing is appropriate as a means of storm hardening. And that piggybacks on the City of Dunedin's --

MR. BALLINGER: And I think utilities have

done that. They've come up with -- you've got that differential, and other inputs have gone into that differential. What do you include in the cost of overhead versus underground. So, those types of planning tools have been developed.

COMMISSIONER BROWN: Is there anything else other than that?

MR. BALLINGER: I believe PURC has done some research into it, as far as areas where it may be appropriate, but again, it comes down to the unique circumstance to then study it, to study all the costs --

COMMISSIONER BROWN: Wouldn't -- wouldn't it help to study it a little bit more thoroughly?

MR. BALLINGER: And I think that these targeted ones will give us that, is the study -- the utilities have been up front in saying that this is really a -- a way to gauge customer acceptance because of the other issues you run into when you convert.

For example, you've got rear lot lines that have, not only electric, but cable TV on it. All right. If we underground the electric, where's the cable TV going to go. We have to get them to agree to it. So, it's not a matter of desire or cost;

it's -- it's another party involved.

There's permitting involved. There's where to place the transformers.

COMMISSIONER BROWN: I get it.

MR. BALLINGER: So -- so, I think these programs will -- will yield a lot of benefit. I think it will give us some insight into the uniqueness of this. That's my opinion of it. I --

COMMISSIONER CLARK: I -- I want to state the obvious, though. We -- we kind of mixed two things up here. We talked about the cost of underground, the differential between overhead and underground construction costs. And we've talked about it's getting -- it's getting cheaper. And that's true, but remember, that's for new construction.

When you talk about conversions, you're taking an existing asset that, in many cases, is already paid for, and you're completely starting with brand-new costs again. So, those costs have to be borne by someone.

And typically, when you look at -- and especially in a -- a more-urban area, where you're doing a targeted underground conversion, your cost isn't even going to be typical; it's going to be atypical. It's going to be extremely high because

of -- of the density and the infrastructure that's already there that you have to deal with.

So, I think that those numbers really need to be taken into consideration. If we're going to look at a pilot study or something, there needs to be some very-strict parameters set around the demographics or the -- the makeup, if you will, of those targeted areas: Are you're talking about a city; are you talking about a rural area; are you talking about a subdivision of medium density.

I think there is some real considerations that we have to look at.

COMMISSIONER BROWN: And where will we be able to access the information regarding the pilot programs that are -- that are occurring today?

MR. BALLINGER: There's a -- there's a couple of venues. One could be in the utility's hardening plans that come in every three years. Okay. You could get updated information on specific projects, cost, benefits, the problems you ran into, things of that nature.

The other one could be in our annual distribution reliability report.

COMMISSIONER BROWN: Which I also -- by the way, that was deleted. I think we need to include

that because this is a multifaceted approach to storm hardening. And that was deleted in the new version, the Commission's review of the annual reliability reports. We absolutely have to include that in the new report.

MR. BALLINGER: As one of the -- it was in the background, I think, of things that the Commission does, is that. That is -- I mean, that's a -- that is included, now, a monitoring, if you will, of hardening activities, as part of that review -- of that report, but again, it is just an aggregation of data.

It's not approved by the Commission. It's assembled. It's used in other venues, when we have rate cases, let's say, and things of that nature, but it's a way to collect data at least. But that could be another venue, if you will, to collect this -- how the -- these targeted things are moving along.

CHAIRMAN GRAHAM: Well, you've talked a couple of times about pilot programs that either are going on now or potentially going to start going on.

We need to make sure -- this goes back to what I was talking about, standardized data collection. We need to make sure that we are collecting data as

they're doing these -- these projects, these -- these pilots because we don't want to miss the opportunity to -- to look at this stuff and to learn from it.

MR. BALLINGER: Right. We have -- we have met with both Duke and FPL. They came in and gave staff presentations and it -- would you like me to give a little explanation of the two programs? They're slightly different.

CHAIRMAN GRAHAM: Well, let me go to Commissioner Polmann --

MR. BALLINGER: Sure.

CHAIRMAN GRAHAM: -- because he's been here waiting awhile. And then I'll come back to you --

MR. BALLINGER: Sure.

CHAIRMAN GRAHAM: -- for that explanation.

COMMISSIONER POLMANN: Thank you, Mr. Chairman.

On the template issue you raised before, and comments at the end, I spoke to staff about that on a couple of different issues. And I think I would encourage that staff -- in terms of data collection and the various things, going forward, that we -- we try to have a -- to facilitate apples-to-apples; that, in any case where it makes sense, that any

data requests or -- or any routine data that are -- that are being gathered, that we try to establish a uniform template.

You're looking at Page 27 here with this or -- or any other case that we format, the type and style of data -- and request it that way. If they don't give to us that way, we ask again. That's the only thing that makes sense to me. We're never going to get it that way unless we require it that way, so -- for this or anything else.

Now, on to the overground and overhead, if I understand it correctly -- and please chime in here, Tom, or others -- the cost -- cost-differential analysis is really the case for either replacement or new construction.

To Commissioner Clark's point, unless we're talking specifically about these pilot programs, it's not really a conversion that -- that makes sense, in my mind. So, are pilot programs looking at taking existing infrastructure overhead and putting it underground?

MR. BALLINGER: Yes.

COMMISSIONER POLMANN: Okay. You had mentioned the cost differential, TECO case, where the example came out to be a zero differential.

Was that a straight replacement or was that new construction?

MR. BALLINGER: I believe it was new construction. And I'm getting a feel from --

COMMISSIONER BROWN: It was.

MR. BALLINGER: From our area. That's across the hall from me.

COMMISSIONER POLMANN: Right. So, in -- in terms of underground/overhead, I would request -- and back to the Chairman's point, I would like to know -- not necessarily as a report back to the Commission, but I would encourage that we try to gather information on things like best practices from -- from a planning perspective for this type of work; what are the standards for evaluation; what goes into -- it's not really just strictly a cost.

You had mentioned a number of other things -- you know, the geography, the subsurface conditions, the layout, you know, whether it's code requirement or zoning or backyard or anything else. There's a whole list of many, many things that are considered.

I think, in terms of how we're looking at the -- staff is looking at what are all the

parameters, and understand that all of the utilities are -- are looking at all of the things.

Maybe it does boil down to decision-making when we're evaluating how it's -- whether or not it's a good investment, is really a cost, but are all the factors being considered appropriately.

So -- so, what are those factors? Are there three, five, 17? I -- I just don't know, but I --

MR. BALLINGER: Right.

COMMISSIONER POLMANN: I would like to look across, not just the four IOUs or whatever, but very widely. And are they appropriately evaluated, all of the factors that should be considered. You had mentioned a couple of other sources. So, what are the best practices in terms of the consideration.

CHAIRMAN GRAHAM: All right. Tell us the two different pilot programs.

MR. BALLINGER: Okay. First one we heard from was from Duke Energy. It's a ten-year pilot. I believe they're doing a -- targeting approximately 1200 miles of underground, out of the 18,000 underground -- overhead that they have in their system.

Targeted by performance, the certain metrics

of momentaries [sic], truck rolls, things like that, where they've had outages and -- and vegetation issues. So, it's looking at areas where there's been day-to-day reliability issues, not just storm-related.

Once that is, they will go into the communities -- and they vary in size from -- one could be a farmer's staff to a -- a pretty densely-populated community. Go in, try to get customer involvement, customer acceptance, and certain things like this.

It's -- it's a take-off, from what they had in their other affiliate they had up in Dominion, and the lessons they learned --

MR. BREMEN: Carolinas.

MR. BALLINGER: In the Carolinas.

MR. BREMEN: That's right.

MR. BALLINGER: I thought it was Virginia, too.

And one of the areas that they came back with was, a key issue was to -- where do you locate the green transformer boxes. That seemed to be a real hang-up in a lot of communities to get that decision made and could stop a lot of projects.

But the -- the goal is to go through to do

this, no cost to customers, even the hook-up, and changing the service drop. But see, if there was not customer acceptance, then they would walk away from the project.

FPL's is very similar, targeting, again worst-part -- performing laterals. I believe a few hundred miles, they were looking at a three-year pilot. Theirs is specifically a pilot. Same type of approach, to go to the customers first. I would say both of these are being funded under existing rates.

Under the Duke, we understand that this was part of the agreement, if you will -- it's not specific in the settlement, but it's part of the step increases that was approved in their last settlement. With the FPL, it would be under the current ones. So, it's under existing rates. There's not an incremental cost to customers on that one.

Quite frankly, one of the first questions staff will ask is, if this is for day-to-day reliability, what could you do, overhead, to fix the reliability because you're going to have to look at a cost comparison of that versus underground-ing as this analysis. So, you know, we

will explore this as this goes on.

And what issues you run into -- there may be, like I said, the third parties on the poles. What do you do with those. That might be the -- the barrier. What do you do when you get to a meter can and you change the service drop and when you pull the meter, you realize the meter can is rusted and corroded. Well, that's a customer cost now. And they may not appreciate that.

So, there's things that we'll learn, I think, along the way with these things that could be useful.

CHAIRMAN GRAHAM: Commissioner Fay.

COMMISSIONER FAY: Thank you, Mr. Chairman.

Just a quick comment and then maybe a question for Tom. I -- I, too -- when I look at the -- the substance of the report, I -- I think that, even based on our hearings, you can go back and forth as it relates to underground-ing and over- -- overhead lines and hardening certain areas as a priority and where to put those resources.

For recommendations within the report, to me, it seemed challenging to -- to include something that in any way might be so specific that it's interpreted to be applied under all situations.

And so, I think -- I think the broad stroke can be appropriate for something like this.

I did think that a report like this would benefit significantly from -- and it's touched on a little bit, but as Commissioner Polmann said, the data that's brought forward, I think we have an opportunity now to maybe look at that up front, so then, when we do get down the road and receive the data, like we did this time, it might be in a format that is a little bit easier to compare apples-and-apples.

I -- I remember sort of jokingly, when the binders hit our desk with the material, and as you went through each utility to look at their information, it was very difficult to compare those responses and some of that information.

And so, I think -- I know how challenging that is. And I know that each entity has its own way of tracking information, but I think if -- if the report does anything that -- that maybe applies a broader brush, it would be a form of commitment to -- to put that data in a format that is a little bit more comparable down the road.

And just want to get your thoughts maybe on a potential way to do that within this report.

MR. BALLINGER: I don't know that we would have an answer within this report. I think it's something staff can look at and talk with the utilities. I don't know if there would be a cost involved to get similar things, based on their data-collection systems and what they have in place. I honestly don't know.

I think it's something that we can desire to have that and express that desire in the report. I don't know that I can have the -- the answer, if that --

COMMISSIONER FAY: And just one quick follow-up, Mr. Chairman.

CHAIRMAN GRAHAM: Sure.

COMMISSIONER FAY: The only other question I had for you is -- is, when I read through this -- fortunately, I have -- I have some folks in staff who have been helping me look back at some of this. And I know the 2007 report is mentioned.

I know there's been long discussions as it relates to the underground-ing and overhead. I see those as being continued discussions. Do you think that this report is an opportunity to continue that discussion or do you think it's -- it's utilized more as a -- a general -- maybe a general document

that states those?

MR. BALLINGER: I would say a general document, and recognize these targeting programs that are going forward. I failed to mention, too, both of those are -- initially, they were planning to start July of '18, their first projects. I think that's a good way to monitor to see where they come and see what information comes out of that.

You have to -- cautious that these are two utilities doing it under existing rates. So, if it's something that goes beyond that, then you may have incremental costs to other utilities of -- of doing this, so...

CHAIRMAN GRAHAM: Commissioner Brown?

COMMISSIONER BROWN: Well, wouldn't it be helpful to include those pilot projects in the underground-ing section of the report to talk about what the utilities are doing and that the Commission will look at that data?

MR. BALLINGER: Yes. We --

COMMISSIONER BROWN: Okay. So, I think we should have that.

MR. BALLINGER: We could -- we could mention that at the workshop. They were explained and

highlighted a little bit, at least, with the information we got there.

COMMISSIONER BROWN: Has the Commission, since 2007, looked at the feasibility of conversion from overhead to underground -- have we done, like, a feasibility study on cost analysis?

MR. BALLINGER: We've done a couple of them. Late eighties was one and I think '07.

MR. FUTRELL: Yeah, coming out of the '07, the Commission directed the utilities to fund a study, underground-ing study, like, Tom mentioned earlier, a broad, high-level study. And it was con- -- provided under the auspices of -- PURC helped coordinate that.

And there were three -- it was a three-phase report that was issued over a couple of years. And so, that's out there. And that was the result of that Commission direction, is the utility-funded underground-ing effort.

COMMISSIONER BROWN: What have we done with that information?

MR. FUTRELL: I think it's helped to inform where we are with underground-ing. It -- it puts a current -- a marker of what the considerations are, but as Tom said, underground-ing is -- is project-

by-project-specific. There's unique costs and circumstances with each project you have to look at.

So, while it does help to advance the concept, it still comes down to what are the project-specific costs and challenges and customer-acceptance issues and funding issues.

COMMISSIONER BROWN: Do you think it would --

CHAIRMAN GRAHAM: And it looks pretty good on a shelf.

COMMISSIONER BROWN: It does look good on a shelf. I don't have it on my shelf.

(Laughter.)

COMMISSIONER BROWN: Do you think it would be helpful to have an updated report with 2018 costs and analysis? I mean --

MR. FUTRELL: That -- that's always an option that, you know, has been, through -- through the -- through time, that -- that's something that comes back to and is looked at.

There's certainly considerations about funding of such an effort, who's going to be in charge of running the -- the effort and those kind of things, but that's certainly something we've seen through -- through time.

COMMISSIONER BROWN: Exploring maybe the opportunity to pursue a -- a study.

MR. FUTRELL: Right.

COMMISSIONER POLMANN: And it's exactly the question I was going to ask. Is there a -- I don't want to say quick because it -- it never is, but have staff ask that question at PURC: Can we get an update. I don't -- I don't know. I just want to --

MR. BAEZ: We will be happy to look into what -- what kind of options we have for refreshing the ten-year report, if that -- if you think that that --

COMMISSIONER POLMANN: I think there's technology changes --

MR. BAEZ: -- help.

COMMISSIONER BROWN: -- for underground-ing.

MR. BAEZ: There are.

COMMISSIONER POLMANN: I think there's cost changes. I --

COMMISSIONER BROWN: Ten years.

MR. BAEZ: Best practices have changed --

COMMISSIONER POLMANN: Yeah.

MR. BAEZ: And certainly, costs have changed, but just -- just with the understanding that a

report of that nature is -- is going to answer real high-level and ultimate questions.

COMMISSIONER POLMANN: Well, I think it brings -- I think it brings it to the forefront and then --

MR. BAEZ: Oh, I agree.

COMMISSIONER POLMANN: We go back to the utilities and say --

MR. BAEZ: We --

COMMISSIONER POLMANN: Ask que- -- ask more questions.

MR. BAEZ: For the information that's contained, if we refresh it, I think it will -- it will -- it will provide some opportunity for discussion.

CHAIRMAN GRAHAM: Commissioner Clark?

COMMISSIONER CLARK: At the risk of getting a little too far out there, when we look at the cost and we take on -- I have no objection to us doing this, but at the same time, I would like to also see the incremental benefit.

And so, that's -- the whole concept of converting overhead to underground is looking at additional benefit. And if you're moving from 99.997 to 99.9975, is it worth that cost. And I --

we all like to keep talking about the cost, but that additional benefit that we get from that conversion --

COMMISSIONER BROWN: Absolutely.

COMMISSIONER CLARK: -- has got to be a part of this. So, I would like for staff to -- if it was not part of the original report -- and I didn't -- I can't remember. It's a long --

MR. BAEZ: I'm -- I'm having trouble remembering what --

COMMISSIONER CLARK: -- time, but I can't remember. I don't remember seeing what those additional benefits were.

And I want to tag just kind of another question on to that -- and I'm going to show my ignorance. Jim or Tom, either one, in calculating SAIDI and SAIFI numbers and -- and CAIDI numbers, when you look at -- I know you -- in SAIDI, you're looking at the whole system.

Are there -- two questions: Are there differences between the transmission side of the calculations and the overall system calculations? Are those two separated?

MR. BALLINGER: We don't get transmission data. The report is on the distribution side only.

COMMISSIONER CLARK: It's only on distribution.

MR. BALLINGER: I believe they're calculated the same in terms of the mechanics of the calculation.

COMMISSIONER CLARK: Is there a way to calculate CAIDI on underground versus overhead? Is there a way to separate that class of customers and calculate CAIDI numbers?

MR. BREMEN: I apologize. I'm looking at Penny.

MR. BALLINGER: Do you know --

MR. BREMEN: Current --

CHAIRMAN GRAHAM: Come on down.

COMMISSIONER CLARK: I'm sorry. This is an out-of-the-left-field question.

MS. BUYS: We get some reliability-indices data on the overhead versus the underground with the reliability report. I'm not sure exactly which indices we get, but they -- companies do provide some of that. And it's kind of part of one of the initiatives, one of the ten initiatives.

COMMISSIONER CLARK: Okay. Good. So -- so, you can calculate that number based on overhead versus underground customers, within a utility

class.

MR. BREMEN: The difficulty -- if I may interject -- is -- is that the discreteness of underground isn't there because, in many instances, you have hybrid infrastructure --

COMMISSIONER CLARK: -- back into an overhead system.

MR. BREMEN: -- serving an ultimate customer, where the ultimate location might be underground, but getting there might be overhead. So, you have to come up with an algorithm or a methodology, and then we have to practice it. So, there's a -- there's a difficulty in assessing that.

COMMISSIONER CLARK: Okay.

MR. BREMEN: There's a -- there's a degree of independent judgment that has to be awarded the local expert.

COMMISSIONER CLARK: And I guess that's probably true when it comes to evaluating all of our underground facilities. There has to be some sort of -- of discretion allowed to -- what's the ultimate cost or -- or what's -- what's the effect of the outage, right?

MR. BREMEN: On assigning causes of outage, yes, sir. That was a long development process to

get to the standards that we currently have and the process that we have on reporting the data.

And I think our data is focused mostly on the distribution side; not -- not so much the transmission side.

COMMISSIONER CLARK: And -- and on that same note, when we talked about the -- the pilot program and -- and Tom, I think you made an observation that's important to me is, this pilot program is -- cannot be labeled a hardening -- it's -- it's not a hardening pilot program.

If you're not looking at the specific effects from storm, then there are so many other things that have to be considered. If you're looking strictly at outage data, I mean, you may be looking at a system that's in a high-lightning area. You may be looking at a system that's in an area that's prone to bad right-of-way. You may have grounding issues in those areas causing outages.

Is that a fair statement?

MR. BALLINGER: In my opinion, yes. The selection criteria is based on day-to-day reliability performance, which I understand the utilities' desire to do that, to fairly evaluate and go target where I'm going to do.

COMMISSIONER CLARK: Sure.

MR. BALLINGER: It --

COMMISSIONER CLARK: But that's a positive benefit to decreased outage time. That is not something that should be considered a storm-hardening cost.

MR. BALLINGER: But I -- both the utilities have said, part of the benefits that they're going to analyze is the reduced storm-restoration costs of going to underground; that that would be an additional benefit of it.

So, could it be a called a hardening project? Perhaps. In my mind, I don't think that's the initial genesis of it.

COMMISSIONER CLARK: Thanks.

CHAIRMAN GRAHAM: Question for you -- I've got two more and I'll leave you guys alone, I promise. Page 3, we're talking about the 2006 order, the fourth bullet from the bottom -- because back in this order, it was assumed -- or actually, it was part of the order, so it was -- it was told to them to collect data, outages data, for the difference between overhead and underground systems.

Did we -- did we give them a template back then of what data to collect or we just said

collect data?

MR. BALLINGER: I don't believe we gave them a template.

CHAIRMAN GRAHAM: And so --

MR. BALLINGER: And a lot of it is like Jim said, you have this hybrid. It's a difficult thing to try to piece it together to get some performance.

CHAIRMAN GRAHAM: So, how long would it take for us to come up with some sort of a template so, moving forward, when they're collecting these data, we're, once again, collecting the right data or collecting data that we can use and not have to massage every time?

MR. BALLINGER: I -- I don't know. I still struggle with that you have underground communities that are fed by an overhead feeder that could be out. I think Commissioner Polmann experienced that personally.

COMMISSIONER POLMANN: Well -- exactly. And the whole hybrid issue -- and I appreciate Commissioner Clark bringing that up -- is my neighborhood is underground. And it's been that way since it was developed in the seventies.

I was out of power in Irma for six days

because, you know, the main road coming into my community was overhead. Now, I don't know where the outage was from the storm -- but to that point of the hybrid system, we have a good thunderstorm with a lot of wind, I could have an interruption for a minute. It's just the way it is.

Now, I don't -- I don't know what the problem is in the overhead system in the community out -- you know, beyond my neighborhood, but I wish somebody would fix it.

(Laughter.)

CHAIRMAN GRAHAM: And that's why we're here.

Last one is on Page 34, stakeholder comments. And it's talking about coordination, communication with the local EOCs. Are we having any problems with our utilities and the EOCs? I mean, because it's hard for me to imagine that we are, but I just want to ask that question specifically.

MR. BALLINGER: No. My -- my understanding is we're not. The county EOCs and the state EOCs communicate during an event, typically, twice a day. There will be conference calls. And the state requests, are there any unmet needs; do you need anything. And that kind of communication goes on.

Now, the individual utility reps, there's not at each-county-EOC. And that's a -- that's a staffing issue.

CHAIRMAN GRAHAM: Well, I mean, we've heard one of the utilities say that --

COMMISSIONER BROWN: Uh-huh, a couple.

CHAIRMAN GRAHAM: -- you know, that if -- if we're in 37 counties --

MR. BALLINGER: Right.

CHAIRMAN GRAHAM: -- we're only manning, like, 33 of them because, you know, some of them, you may only have 10 or 15 people.

MR. BALLINGER: And --

CHAIRMAN GRAHAM: You really can't have -- you can't have somebody at each one of those.

MR. BALLINGER: Irma was that type of storm. Typically, if it's a more-directed storm, they'll be in the counties affected. They'll -- they'll be there. So, it's --

COMMISSIONER CLARK: Can I -- Mr. Chairman, to -- to that great point, that's one of my -- one of my key points had to do with EOC. But one of the things I heard in the meetings wasn't relative to the county EOCs.

What was happening is each of the cities are

now establishing their own EOCs as well. And that seemed, to me, from the reports and the comments that I read, and the testimony we received -- that seemed to be where the real beef was.

The county EOCs were pretty-typically manned by the utilities, but they didn't have enough people to go in and man the city-run EOCs. And that's where the largest number of complaints came from, to me.

CHAIRMAN GRAHAM: Well, I mean, the reality is -- and let's go back to Commissioner Polmann's neighborhood where you have one county and 37 cities.

COMMISSIONER CLARK: Yeah.

CHAIRMAN GRAHAM: And you know, you can't --

COMMISSIONER CLARK: It's not possible.

CHAIRMAN GRAHAM: Yeah, it's just -- it's not functional. And that's why you have them in the county EOC and not all the cities.

COMMISSIONER CLARK: Exactly.

CHAIRMAN GRAHAM: And I think the burden is upon the city to have that --

COMMISSIONER CLARK: Send somebody from the county.

CHAIRMAN GRAHAM: -- communication with that

one -- that one county.

COMMISSIONER CLARK: Absolutely. I agree.

CHAIRMAN GRAHAM: Commissioner Polmann, and then Commissioner Brown.

COMMISSIONER POLMANN: I -- in that case -- it seems like there's 37. There's not quite that many, but --

COMMISSIONER BROWN: Pinellas?

COMMISSIONER POLMANN: Yeah. Last count --

COMMISSIONER BROWN: There's, like, a hundred.

COMMISSIONER POLMANN: I think it was 24, but there was -- in any given the day, there are communication issues between the counties and the cities. In an emergency, it's a huge challenge. And it is a two-way street, to your point, that between the utility and -- and the county and the cities -- and I talked about this issue with -- with staff in particular.

I think what we would like to have is an understanding with the utilities that they've established -- at least provided an opportunity, not just with the counties, but with the cities to say, you know, this is our contact information. We're working with the county. And this is how you get in touch with us, but primarily, you should be

coordinating with the county.

CHAIRMAN GRAHAM: I think --

COMMISSIONER POLMANN: And -- and you know, here -- here's our phone number. If there's a particular problem and -- and here's an issue with the county and you have an emergency, here is our contact information.

COMMISSIONER BROWN: Yeah.

COMMISSIONER POLMANN: We're -- we don't have enough staff to be in every city. And I think the city should appreciate that.

CHAIRMAN GRAHAM: I think it's more of a rarity. I mean, when I wore a different hat, we had regional areas, which, you know, you're covering nine different counties. And being the nine different EOCs -- you know, each one of the cities -- you know, it's their burden to come with inside.

COMMISSIONER POLMANN: Exactly.

CHAIRMAN GRAHAM: And they have the training and they have all of this stuff to be a part of that process.

Commissioner Brown.

COMMISSIONER BROWN: So, I want to kind of wrap up the underground-facilities portion in

Section 5 because there's other areas to get to in this report.

It would be my suggestion, in -- included in Section 5, for us to include information regarding the pilot programs that are in existence and that the PSC will study the analysis during the annual reliability -- in the annual reliability report, if that's the most-appropriate forum.

And then I would also include a suggestion -- and I don't know if I should just say we should update the 2007 report regarding incremental costs and benefits regarding underground-ing, if the -- it's really up to the Commission here, if you all want to update that report or to have staff look at updating that report because I don't know where the cost would be allocated to -- to the actual updating it.

CHAIRMAN GRAHAM: So, you -- I can't imagine you're saying, hold this report up until we update the other one. Basically, you're just saying --

COMMISSIONER BROWN: No.

CHAIRMAN GRAHAM: -- give staff the direction to update the other report.

COMMISSIONER BROWN: Absolutely, to -- regarding underground-ing, if you all are amenable

to that.

And then, we -- one more suggestion, just hearing from three of you here, regarding standardizing the information that the Commission receives on hardened costs or in storm-hardening costs, what type of data were you concerned with, with the data that you were -- you're having a problem?

CHAIRMAN GRAHAM: Well, the -- the problem we ran into -- and it just all comes in different forms. And you know, you just have to -- once again, you have to -- you put it all down there and do your best case -- your best guess to -- you know, to figure out how this translates to this and how this translates to that and --

COMMISSIONER CLARK: Specifically, some of the utilities don't record specific types of outage causes, I think, was one of the things we saw in the report. They didn't list the cause as a vegetation-management issue. They didn't list --

COMMISSIONER BROWN: Also, post-storm.

COMMISSIONER CLARK: It's outside the right-of-way.

COMMISSIONER BROWN: Yeah.

COMMISSIONER CLARK: Am I -- is that --

CHAIRMAN GRAHAM: Yeah.

COMMISSIONER BROWN: That's right.

COMMISSIONER CLARK: Same thing, I remember seeing that.

COMMISSIONER BROWN: Is there a sug- -- I mean, I think we should poss- -- if there are three of you up here that have a problem with the data received, we should at least address in the report, saying, having staff look at standardizing whatever --

CHAIRMAN GRAHAM: Well, I don't think we have to get into specifics. We can just direct staff to come up with some standardized report -- I mean, standardized data collection.

COMMISSIONER BROWN: Uh-huh.

CHAIRMAN GRAHAM: So, we have --

COMMISSIONER BROWN: Okay.

COMMISSIONER POLMANN: Well, there -- there's a couple of issues on standardizing the -- the reporting to us. And it's almost across the board.

In terms of the storm-related communication and preparation, either before, during, or in restoration -- for example, pre-storm, we have instances where -- in this particular case, a lot of comments, concerns about vegetation-management

folks complaining, well, they didn't perform their vegetation management appropriately.

And now, they're saying -- well, they're saying that the issue with -- the trees falling on the wires; and then the complaint, well, they didn't do a good job with that. Well, what's the real story? Or -- or -- communities saying, well, we didn't have enough contact.

Perhaps there could be a standardized reporting on the utility saying, we contacted the county, we contacted the cities, we visited on -- on such and such a date or -- just a way for some documentation that could be reported.

I -- I don't want to put a burden, but I think the direction to staff -- and it doesn't necessarily need to be here, other than a general statement, the things that are important with regard to hardening, with regard to vegetation management, with regard to key things that deal with reliability and recovery and so forth -- that there's some documentation, rather than the issue coming up and -- and the response being, well, yes, we met with everybody -- not that that's what they said, but that's a little bit too general. I would like to have some more specifics.

So, I think a general direction is -- is appropriate. I'm not quite sure how to document that. I -- I would suggest we leave that to staff to come up --

COMMISSIONER BROWN: Okay.

COMMISSIONER POLMANN: -- with the right words. And again, I don't want to create a cost burden for the utility to write down absolutely everything that they do every day. That -- that's not what we're looking for.

CHAIRMAN GRAHAM: Actually, for the most part, they do. It's just a matter of finding out what box it's in.

Mr. Baez.

MR. BAEZ: Mr. Chairman, brief question and points to -- first, to Commissioner Polmann's point, I think what you just said is probably best encapsulated in one of the recommendations that the staff provided as part of their reporting.

We use the term "meeting log," but that's not really the intent. It's -- it's a summary, more of a summary of contacts with local authorities, consistent with that corresponding initiative. So, I think we've got your -- your idea covered there.

Commissioner Brown, to your suggestion about

the -- about refreshing the 2007 report -- I know Mark mentioned it before, but I do want to remind you all, as -- as you consider that, it's -- it's doable. It may even be timely, after -- after ten years.

What I would remind you is that, at that point, it was a Commission directing the utilities to -- to fund the report -- and I hate to be a stickler for those kinds of details, but if -- if you all can at least be a little clearer with -- with how you intend this to get carried out, obviously, we will be manning it and -- and -- and overseeing it.

COMMISSIONER BROWN: Well, I think the PURC suggestion -- since we're members of PURC anyway -- PURC can do it at no cost.

MR. BAEZ: I -- I -- I'm not authorized to negotiate for PURC. They -- they --

COMMISSIONER BROWN: I hear all the clat- --

MR. BAEZ: There were snickers in the crowd, too.

I -- those -- those details, Commissioner, are -- are probably things that we can work out later, but I just wanted to bring to your attention that there is that -- that -- funding that sort of

exercise does have a cost. It -- it does, and --

COMMISSIONER POLMANN: You can -- you can remind them how important it is for them to update the report and then --

MR. BAEZ: So --

COMMISSIONER POLMANN: -- suggest that they do it at no cost.

COMMISSIONER CLARK: Can we ask staff to bring back some recommendations and price options? See what those options --

MR. BAEZ: Well, we can do that, Commissioner, or -- or we can -- or you all do have the ability to follow in -- in your predecessors' footsteps in terms of actually directing the utilities to update that -- that report; however -- you know, whatever meaning that has.

COMMISSIONER CLARK: My -- my gut tells me that, instead of directing the utilities to do their own updates, we get a better result from a -- a more-centralized process.

MR. BAEZ: Well, yes, and -- and --

COMMISSIONER CLARK: They fund their portion.

MR. BAEZ: I'm sorry for -- for -- maybe that was a misleading statement. I think by directing the utilities, I think, if you will recall, what

Mark said -- the report was done independently. It's --

COMMISSIONER CLARK: Okay.

MR. BAEZ: It's that all the -- all the gnashing of teeth took place outside our doors in terms of, you know, who was picking up the -- and organizing the --

COMMISSIONER CLARK: As long as the report is in -- is compiled by a third party, independent party, that --

MR. BAEZ: That's --

COMMISSIONER BROWN: Right.

COMMISSIONER CLARK: I'm fine with that.

MR. BAEZ: That's the 2- -- that's the genesis of that 2007 report.

COMMISSIONER CLARK: I'm sorry. I didn't know that.

MR. FUTRELL: That's what happened in the 2007. There was the utility -- the Commission gave direction to the utilities to -- to do an underground-ing study in conc- -- in concert with PURC. PURC helped to bring everybody together, worked through the process.

PURC actually issued a RFP. A third-party was selected to actually do the work and, obviously,

all involved were -- were there looking --

COMMISSIONER BROWN: Wasn't --

MR. FUTRELL: -- as the process went along.

So, if that's acceptable to the Commission, that's a model that was done before.

COMMISSIONER CLARK: I think that's great.

COMMISSIONER BROWN: Yeah, I -- that's good.

CHAIRMAN GRAHAM: Come back to us with a dollar amount before you start spending any.

MR. BAEZ: Well, we're -- that's the whole -- that's the whole point, Chairman. We're trying -- we're trying to get off scot-free here.

CHAIRMAN GRAHAM: Was there a report that came out in the Legislature? Because didn't they have a group that they put together right after the hurricanes?

MR. BAEZ: I'm -- I'm trying to -- I think that we're talking about the same report. And the -- the 2007 report, as I recall, was at -- at the request of the -- of the Legislature? Wasn't it?

MR. BALLINGER: I believe so.

MR. FUTRELL: There was the staff-put-together report. It was a general underground-ing --

MR. BAEZ: Ah --

MR. FUTRELL: -- overview, but the actual doing it and doing the detailed analysis and data collection from the utilities -- that was the PURC-administered utility-coordinated report.

MR. BAEZ: But -- but --

MR. FUTRELL: Maybe Jim can maybe follow up. He -- he's nodding his head.

MR. BREMEN: I agree with the boss.

MR. FUTRELL: Okay.

COMMISSIONER CLARK: Good answer.

MR. BAEZ: But that was one of the three requests that the Legislature had made of the Commission. That's how that report came to be.

COMMISSIONER POLMANN: Mr. Chairman, could I -- could I make a suggestion that we direct staff to review this issue with PURC and -- and determine an appropriate way to have an independent party work with the utilities, develop a scope of work for a refresher and come back to us with --

MR. BAEZ: Be happy to.

COMMISSIONER POLMANN: -- an idea of what a -- what a cost would be and then have --

MR. BAEZ: We can --

COMMISSIONER POLMANN: -- staff make some recommendations, suggestions to us; perhaps, even

informally about --

MR. BAEZ: We can --

COMMISSIONER POLMANN: -- how it might be --

MR. BALLINGER: We can look --

COMMISSIONER POLMANN: And we'll go from there.

MR. BAEZ: -- into it and bring it back to you as an independent item.

CHAIRMAN GRAHAM: I mean, I think the specifics for this report is just going to instruct staff to look at updating those numbers. The specifics -- they're hearing this pretty clearly.

COMMISSIONER POLMANN: Yeah, I think the action item is to update, refresh.

COMMISSIONER BROWN: Yes --

MR. BAEZ: That's -- that's --

COMMISSIONER POLMANN: -- details --

MR. BAEZ: Thank you.

COMMISSIONER POLMANN: -- separately.

CHAIRMAN GRAHAM: Anything else on underground-ing before we move on to other areas of this report?

Yes.

COMMISSIONER POLMANN: Is there value in -- I think the key issue that we heard here, other than

the fact that underground-ing is -- is -- performs well, with regard to impacts during storm. The key issue I heard --

COMMISSIONER BROWN: Generally.

COMMISSIONER POLMANN: -- was the hybrid nature of that in any distribution system. I don't -- I don't know that it's -- that it's identified here specifically.

You know, there's an issue here that has been discussed in general --

MR. BALLINGER: Right.

COMMISSIONER POLMANN: -- that it's not the panacea; it doesn't solve all the problems. It performs well within a particular location, but with regard to the overall system --

MR. BALLINGER: Right. And that's why I suggested, I think those tables might be better as an appendices with the utility response that had those explanations, in that, some of these are hybrids and include those -- that kind of thing, that it is a difference.

And perhaps, a -- going forward, instead of focusing on outages of underground versus overhead, look at damage underground versus overhead instead. And that avoids the hybrid part. That may be an

answer to get there.

If -- obviously, if underground is not damaged, it probably was able to provide service, but if it's attached to an overhead that had damage, that's -- that's the issue there. So, maybe that's a way to look at this -- this nut.

COMMISSIONER POLMANN: Well, my only -- my only -- I agree with what you said. The point in the text, as opposed to in a table and appendix is -- is some words to identify the hybrid nature and that a community served with underground is still susceptible to outage because of the fact that their underground is served by a component of the distribution system that's overhead.

MR. BALLINGER: Right.

COMMISSIONER POLMANN: Thank you.

CHAIRMAN GRAHAM: Anything else on underground-ing? Any --

MR. HETRICK: Mr. Chairman?

CHAIRMAN GRAHAM: Yes.

MR. HETRICK: For clarification, I think Commissioner Brown had made three recommendations. And we just spent some time clarifying the second point on updating the 2007 report, rate costs, and benefits, and Braulio's comment.

But for clarity for staff -- I know we're going to move on. Does the Commission want to standardize these three points and vote on them or give us direction to go ahead and undertake these three efforts before we move on? Or do you want to wait until the end?

COMMISSIONER BROWN: Chairman's call.

CHAIRMAN GRAHAM: Well, I mean, I think, once we put all this back in the report again, we're going to have to rubber-stamp it. I guess you guys can give me the -- the ability to wordsmith, for lack of term.

I mean, I -- I heard the three points that she made. I mean, are you looking to do that -- wordsmith it now or you want to wordsmith it later?

MR. HETRICK: We don't need to wordsmith it now; just that the Commission has -- agrees sort of with those three points.

COMMISSIONER BROWN: I mean, if you want a motion, I'd be happy to make one, if that makes it --

MR. HETRICK: Oh, consensus is enough.

MR. BAEZ: I think we can work with your consensus. We see it clearly. So, no -- no need to.

CHAIRMAN GRAHAM: Anything else, undergrounding? Anything else with EOC centers?

COMMISSIONER CLARK: Okay. So -- yeah, if you want -- if we're going to talk about where the -- all right. Let me ask a question. So, in the report, we're looking for things that, I guess, the Commission has some direct control, influence over.

My analysis of the report was that the -- many of the things that I think are some of the biggest things that this Commission can do aren't necessarily things that we have direct authority over.

I think that by becoming somewhat more of an advocate for some policy changes within the Legislature or executive branch, being an advocate to make some changes might be as beneficial.

Are those things that the Commission is comfortable including in our report or not?

COMMISSIONER POLMANN: There's --

CHAIRMAN GRAHAM: Say that again?

COMMISSIONER BROWN: I --

COMMISSIONER CLARK: Well, I may have confused --

COMMISSIONER POLMANN: Well, it -- there are a number of things in other subject matters that --

COMMISSIONER CLARK: -- yes.

COMMISSIONER POLMANN: Over which we don't have authority that I want to discuss, but I --

COMMISSIONER CLARK: Me, too.

COMMISSIONER BROWN: Me, too.

COMMISSIONER CLARK: And -- and one of them is the EOC. That's -- that's an issue. We don't have the issue to do what -- you know --

CHAIRMAN GRAHAM: Well, we may not have the authority to do anything with an EOC, but if there's an -- if there's a problem, you know -- if there's a problem between the county EOCs and the utilities, I think we do have that authority to -- to tell them, you know, or to identify what the problems are and how they need to fix it.

COMMISSIONER CLARK: Even in -- in light of the municipals and cooperatives, which we don't -- may not have quite that authority over, but still may need to have representatives in those EOCs.

COMMISSIONER POLMANN: Well, let me -- let me just suggest, the authority we have is with the -- with the utilities. And -- and I think, from the discussion I had with -- with staff, the first issue is to establish how they're communicating -- how the utility is communicating with those who are

operating an EOC or a function of an emergency response, which may be, in a small community, the sheriff's office and that's it.

I mean, they may not have, you know, a large EOC operation. They have a function, but not a building and -- anything else, but -- so, I -- I would suggest that we have staff establish that the utility, in every instance -- that they serve -- wherever they have service, that they report back to staff on what they're doing and how they do it.

And -- and that's where we have the authority is to re- -- require an identification of reporting and -- and back to this template issue. I'm comfortable with that. I don't -- I don't know that there's consensus on that level of comfort.

If you have another suggestion, I'm -- I'm open --

MR. BALLINGER: And --

COMMISSIONER POLMANN: -- to discussion.

CHAIRMAN GRAHAM: I don't see the need for the extra work. I -- I guess, the reason why I brought it up is because I didn't think that there was a problem. And so, if there is a problem, let's talk about what the problem is because --

COMMISSIONER POLMANN: The only -- the only

problem that I heard in workshop was -- was a desire from the local communities to have better communication. Now, if that includes a person, I think that's a cost burden, a staffing burden that could be addressed. I'm not suggesting that that's the right way to go.

I -- I think there's a communication issue that could be addressed otherwise, which -- which I think is where the discussion went. That's what I heard.

COMMISSIONER BROWN: I think -- and -- and you're right, Commissioner Polmann. I mean, even in the comments that were filed in the docket, there was a communication -- at least there were customers in cities that said that they would have liked to have had a representative in the EOC.

We can even just do it with one sentence saying there is an issue -- there was an apparent issue identified during -- in this docket, with -- potential issue with having a utility member in all of the cities', counties' EOCs -- it was identified during the workshop. It was identified during the comments.

You can just -- it's not contained in this recommendation at all, but we can identify issues

that came out, if you see them as worthy of being included in the report.

COMMISSIONER CLARK: Yeah, I do. And I think it was a -- I guess a got it a little bit deeper than that from listening to the comments that there were still counties -- and I'm -- I'm not referring to city EOCs, strictly county EOCs -- but we have county EOCs that were having problems making communication, contact, more so with municipal systems who had customers that were outside the city limits.

That was -- that was more what I was -- what I was hearing. And we had some of the cooperatives that did not staff all of their EOCs. Some of the munic- -- some of the investor-owneds do not staff each of the EOCs.

Now, this storm was an exception where, yes, they would have had to have had 35 employees. That is not the norm. That's -- this is way outside of the norm in terms of the number of employees it takes to staff an EOC during an emergency operation.

Normally your five or six counties would probably be more common. I don't think that's a burden for a utility company to have to have

someone in the EOC. I think it should be a requirement that every utility company has an employee in that county EOC office during an activated emergency.

COMMISSIONER BROWN: Mr. Chairman, so, maybe it would be appropriate, under the communication section, to at least touch on -- there were stakeholder and customer comments that touched on this issue during this docket and during the workshop.

COMMISSIONER CLARK: And that was my -- my original question is: Can we just include that as a recommendation. I -- I don't think it's -- we don't have any -- I really don't know that we have the authority -- I'll turn that to you attorneys to figure that out, but I don't know that we have the authority to say, yes, you will do this, to everyone. We probably do to a couple of the guys, but not to everyone, but maybe we could make it a suggestion and --

COMMISSIONER BROWN: Uh-huh.

CHAIRMAN GRAHAM: I have a con- -- I -- I have a concern about this because maybe just coming from being a county guy, you have some EOCs --

(Brief interruption.)

CHAIRMAN GRAHAM: You have some EOCs where you'll have a co-op, you'll have a muni, and you'll have one or two IOUs in there. And you know, requiring them to be at each one of these counties, I think, starts to be problematic. I think you allow the county EOCs to manage themselves. I mean, they know who they need to have there.

COMMISSIONER CLARK: Uh-huh. And in most cases, I think the county EOCs, from what I was hearing, want these folks there. I think that is their desire is that they be there. I certainly would give them the latitude to say -- the county to say, we don't need you, we don't want you. Certainly. Absolutely. But if the county would like to have someone there from the utility, I think the utility ought to have to provide that person.

COMMISSIONER BROWN: Maybe better-coordinated efforts.

COMMISSIONER CLARK: And -- and maybe that's it. Maybe we just say, you two have to work out how you're going to handle this.

CHAIRMAN GRAHAM: Well, I -- I just want to make sure we're understanding, we're not telling our IOUs to be at each one of these different

counties, but we're --

COMMISSIONER BROWN: No.

CHAIRMAN GRAHAM: -- suggesting that they improve the dialogue.

COMMISSIONER CLARK: Okay. That's one way of looking at. I would -- I don't have a problem with us saying, you will have someone in an EOC during an activated emergency. I don't have a problem saying that.

CHAIRMAN GRAHAM: I have a problem with that, but, hey -- that's why we vote.

(Laughter.)

CHAIRMAN GRAHAM: Anyone else?

MR. BALLINGER: Perhaps, on that --

CHAIRMAN GRAHAM: Yes.

MR. BALLINGER: I'm going to kick myself for doing this, but that was -- that was our second bullet on Page 2 of the memo about, in their hardening plans, to --

COMMISSIONER BROWN: The first one or the second one?

MR. BALLINGER: The memo --

COMMISSIONER BROWN: Okay.

MR. BALLINGER: -- that has not changed.

COMMISSIONER BROWN: Oh, okay. Okay.

MR. BALLINGER: To -- when their hardening plans come in again, to have a more-detailed description of their communications with local EOCs, how they staff them, things of that nature, to give you a better explanation of what utilities -- we just touched on this in the workshop and the data collection. It came up, little bits and pieces. We don't have a very full picture.

Staff was recommending that, in their hardening plans, that we have a more-detailed description of their staffing practices at EOC and you can have a better handle on it. And that will be something brought before the Commission to vote on is their hardening plans.

So, that recommendation was there to do as -- as a going-forward. And I don't know that you have to decide it today what you want, in other words.

COMMISSIONER CLARK: Yeah --

CHAIRMAN GRAHAM: Mr. Baez?

MR. BAEZ: Well, first, I'm not going to kick Tom because he actually said more or less what I was going to say. The -- that recommendation actually acts as a backstop and -- and it is an issue that's going to come before you with a --

to -- to comment on with a little bit more definitiveness over -- over time.

And the problems are -- you know, the -- whether you're satisfied or not satisfied, that really starts to become the standard. You know when you are and you know when you aren't, but they're going to tell you what they're doing.

So, it's not as much as ordering the utilities to -- to do any particular thing, but they know that they have a -- they have a satisfaction standard to meet. So, they're going to --

COMMISSIONER CLARK: Good point.

MR. BAEZ: -- want to be as thorough as possible.

CHAIRMAN GRAHAM: That --

COMMISSIONER CLARK: I'm good.

CHAIRMAN GRAHAM: Commissioner Polmann.

COMMISSIONER POLMANN: Commissioner Clark, I -- I was with you a few days ago, but I think I would like to have more information as to the current practices and -- and I think this recommended action that Tom just referred to will provide that. So, I -- I would like to wait on a written statement that either directs or -- or recommends staffing at all counties.

COMMISSIONER CLARK: I don't have any objection to us waiting for the -- I would like to make sure we include the municipals and cooperatives in the data request.

COMMISSIONER POLMANN: I don't have any issue with that.

MR. BALLINGER: That's --

COMMISSIONER POLMANN: I mean, we asked 57 electrics for data to begin with.

MR. BALLINGER: That's different. They don't provide a hardening plan for approval. Now, you can ask for --

COMMISSIONER CLARK: You're saying that's included as part of the hardening plans. I'm --

MR. BALLINGER: Right. Only the IOUs have the -- the hardening plans for approval. I mean, we can --

COMMISSIONER CLARK: Can we just -- do just a data request?

MR. BALLINGER: Sure, we can get that and get that to you.

COMMISSIONER BROWN: If they --

MR. BALLINGER: We'll go from there.

COMMISSIONER BROWN: If they send it, they send it.

COMMISSIONER POLMANN: I think it would be helpful to request that.

COMMISSIONER BROWN: Send it.

COMMISSIONER POLMANN: And if they provide it -- let's just look at the full picture -- not that we can do much with it.

CHAIRMAN GRAHAM: Sure.

COMMISSIONER BROWN: So, Commissioner Clark, are you okay with that memo and the discussion that occurred today?

COMMISSIONER CLARK: Yes, absolutely.

COMMISSIONER BROWN: We can move on?

COMMISSIONER CLARK: Absolutely.

COMMISSIONER BROWN: Cool.

CHAIRMAN GRAHAM: Anything else for EOCs?

COMMISSIONER FAY: I just had one point of clarification. Commissioner Polmann said he was with Commissioner Clark a few days ago. That was --

COMMISSIONER BROWN: Yeah, I was --

COMMISSIONER FAY: -- actually, for open records, he was not with Commissioner Clark --

COMMISSIONER BROWN: I was confused by that, too.

COMMISSIONER FAY: -- on this issue --

COMMISSIONER POLMANN: I was not physically with, nor talking to, nor discussing anything that's in this report --

CHAIRMAN GRAHAM: He's meant philosophically.

COMMISSIONER POLMANN: I was conceptually on the same point.

COMMISSIONER BROWN: I was wondering that, too.

COMMISSIONER FAY: Perfect.

COMMISSIONER BROWN: Where --

COMMISSIONER CLARK: I had to think of where I was three days ago, so --

COMMISSIONER BROWN: Thank you for bringing that up. I was agreeable on the point of staffing all of the counties until I had a discussion with staff and -- and I would like more information.

And then I may or may not agree with you, in the future, ever again, on anything.

(Laughter.)

CHAIRMAN GRAHAM: All right. So, moving forward, let's -- let's get on a subject, like vegetation management or something along those lines. And we'll attack that and specifically where it is in this report. And that way, we can kind of systematically go through this report.

Let's take a five-minute break so we can kind of --

COMMISSIONER POLMANN: Great.

CHAIRMAN GRAHAM: -- organize our thoughts and -- and when we come back, if you have a subject, tee it up, we'll talk it through and move on to the next subject.

(Brief recess.)

CHAIRMAN GRAHAM: All right. Commissioner Clark asked to go, so --

COMMISSIONER CLARK: Okay. Thank you, Mr. Chairman.

We -- we were just having this discussion about how we go -- how we proceed here. And I had made the suggestion, I would just -- I've got four areas of concern that I would like to see addressed in our report.

These are not necessarily action items that the Commission needs to take. As I mentioned earlier, I think that some of these strictly may be advocacy positions. And I think, in many cases, you have already addressed a couple of these issues. There are some of them that are in the staff comments, but I would like to note that they are at least -- if the rest of the group agrees,

they are concerns. And I think they are not too complex of policy pushes for us.

And some of these may be as simple as -- is suggestions that this needs to happen. This group needs to get with this group and -- and something needs to be done, but I mentioned my -- I had five, actually. My first one was the EOC point of contact.

The second area that I would like for the Commission to address, take a position on, is getting behind some sort of preemption legislation on tree-trimming restrictions that the cities have. This is probably the biggest can of worms that you can possibly open, but it doesn't bother me to open that can.

I think there are a lot -- there are tons of outages that are caused and utilities being blamed for those outages when it is not necessarily their fault. These trees could have been removed. City tree ordinances are stopping prudent right-of-way trimming. And I think that that issue needs to be addressed from a policy -- I think this Commission needs to be on record saying, hey, here is part of the problem.

If you look at the outage causes, vegetation

management was the single-biggest issue that affected this storm. And there's a significant portion of that outage time that could have been by reduced by vegetation-management policy.

COMMISSIONER BROWN: Can I --

CHAIRMAN GRAHAM: Let's let him go through his list.

COMMISSIONER CLARK: Okay. And that included Right Tree, Right Place programs. I think we can be fairly extensive in this recommendation, but that's No. 2.

No. 3, I think we should also take a position regarding utility poles that are not owned by the regulated utility. If a third party derives revenues from a regulated utility, I think that there is -- there should be a mandated service-inspection period on those poles, or at least we have some sort of policy push for legislative action that would require that. Or we come up with some other way to make that -- that punitive for the third party.

Fourth area, I think that we need to do a better job of coordinating with the -- or the utilities need to do a better job of coordinating with the hospitality industry. But my suggestion

was that, if nothing else, that we host or -- or we arrange for a meeting between the Florida Restaurant and Lodging Association, some of these other support organizations or trade allies with the utility companies to establish some parameters under which they're going to operate in emergency conditions.

I also think that we should make a policy push, maybe be -- maybe toward the executive branch that, in the Governor's executive order, that some authority be given to the Governor for -- in the executive order to establish some additional lodging allocations for utility workers that we're bringing into the state. I know that was a serious problem this time.

And finally, critical facilities was another one of my -- my concerns. I think that -- I know everybody is scared to touch this issue. This is a -- a -- one that's going to probably cause more problems, but I think that the critical-issue identification should fall on the responsibility of the county EOCs. I think that should be their responsibility to list those out, to define those.

And then I think that it should be a coordinated effort between the county and the local

utility company that is serving what is identified as critical infrastructure, critical facilities -- that they do two assessments; they do a vulnerability assessment on those facilities, and then they do an estimated restoration assessment so that everybody knows, going into it, that if we have a storm, what is the vulnerability of this facility and what is the anticipated restoration time in the event of a major outage.

I think that we can eliminate some -- some undue expectations on the part of facility owners that, hey, this should be back on within two hours. I think they need to know up front. I don't think that, in any of the counties, this would be too monumental of a task.

There are -- we all like to think, you know, a person -- a person who has a medical necessity for electricity in the house -- that's a medical -- that's medically-essential service. That is not critical infrastructure. That is not critical facilities. We're talking about the hospitals, nursing homes, things of that nature.

Let the counties identify what those are, for their county. Let them be responsible for managing that list. I think that it is impractical to put

the burden of identifying critical -- critical infrastructure, critical facilities on a utility company. Your opinion and my opinion of what is critical for your county may vary. And I think it would put a level playing field across the state on how these facilities are identified in rank.

And that's all I have, Mr. Chairman.

CHAIRMAN GRAHAM: Okay.

COMMISSIONER CLARK: I'll not say another word, I promise.

CHAIRMAN GRAHAM: Let's go through that list.

COMMISSIONER CLARK: Oh, we're going to debate it.

(Laughter.)

CHAIRMAN GRAHAM: No -- well, I mean, I -- I understand it's your list, but you know -- and they're all -- don't get me wrong, they're -- they're all great things, but --

COMMISSIONER CLARK: Sure.

CHAIRMAN GRAHAM: -- it may tie into some of the different things that they want to deal with, so we can kind of put these four things to bed and then move on to something else.

So, the first one was preempting -- preemption -- preemption legislation, as far as

tree trimmings go.

COMMISSIONER BROWN: Mr. Chairman, I had something a little bit softer --

CHAIRMAN GRAHAM: Sure.

COMMISSIONER BROWN: -- than that. So, I --

COMMISSIONER CLARK: Already compromise.

(Laughter.)

COMMISSIONER BROWN: A softer approach. I understand these are more -- these are -- these are big policy suggestions.

CHAIRMAN GRAHAM: So, you have the carrot and not the stick?

COMMISSIONER BROWN: I think it could be -- I think it's an easy carrot and stick. I think the Commission can develop a statewide policy on Right Tree, Right Place. And -- and I know these local governments have different -- their own codes and ordinances, but I think we -- since we heard the biggest impediment to restoration was clearing vegetation, which -- from fallen trees, branches, outside of the right-of-way, I think we, as a Commission, can, in a matter of public -- in the -- in furtherance of public safety and reliability of the overall electric grid, we can institute a statewide -- or encourage the development of a

statewide policy, Right Tree, Right Place. And we can work on that to address vegetation management.

And I think it kind of -- if the Commission is not interested in pursuing the -- the bold recommendation of Commissioner Clark, I think this could kind of be a first step.

CHAIRMAN GRAHAM: Commissioner Polmann.

COMMISSIONER POLMANN: I think Commissioner Clark's suggestion is a major one. I -- I think things of that nature have been talked about widely out- -- outside of this arena.

I think there will be significant pushback from local government. I don't know that it's a position for us to advocate. So, I'm a little bit hesitant -- hesitant for us to become an advocate. It puts us squarely between the utilities and -- and local governments.

So, I'm -- I'd like to suggest or -- or offer an alternative. I -- the other point being that I -- I'm hoping, I don't know this for certain -- but I'm hoping that those are a limited number of cases where there's a real conflict between a utility and a local government. We hear about them because I think they're -- they're major issues when they -- when and where they occur.

On the other hand, to -- to agree with Commissioner Brown, I think vegetation management and the impact on overhead facilities is -- is very significant, widespread. And I think we already have material in the document that looks at gathering information on specific practices, frequency of the vegetation-management activities.

So, I would -- I would support that we require of the utilities to get much more specific with us. There's a periodic management, number of miles, or portion of the -- of their system and so forth -- I think we need to be much more specific. I don't -- I don't know that what they're doing right now is the right frequency or -- or so forth. I think that more information on that would be appropriate. And that can be readily done.

The other -- the other thing is, on private property -- how is that being handled. And I think that's a huge conflict. You know, the utilities have certain easement rights in the right-of-way.

I don't -- I don't know how those are actually being enforced that the utility in -- in the right-of-way has a conflict with certain local governments. And that's specifically I think what -- what you spoke to.

COMMISSIONER CLARK: Yes.

COMMISSIONER POLMANN: But then, where they are in the right-of-way, in their own easement, there's private-property vegetation that's potentially hanging over into the right-of-way. I think that's a local-government responsibility to maintain the right-of-way.

Now, is that within -- within the easement agreement that the utility has with the local government? Who's responsible for vegetation that's hanging over into the right-of-way? Where are the easements located in the right-of-way? Does the utility have authority, because of the easement agreement with the local government, to trim what's in the public right-of-way?

I don't -- I mean, these are details -- the only authority that -- that the utility has is what authority the local government gives them through the easement agreement. And I'm sure there's many different forms of easement agreements.

So, this is information that we simply don't have. We can direct a utility to do various things, but they can only do what the easement agreement allows them to do. So, I -- I would suggest that we get more information -- I don't

want to ask for every easement agreement that exists around the state, but I would like to know what the flavor of those may be.

Now, if there's a conflict there, that's a -- that's a contract conflict between the utility and the local government. We don't have any authority to deal with that.

So, the Right Tree, Right Place -- that's kind of an existing education program. I don't know that that's ever going to be effective with a local government, per se. I think utilities are already kind of on that. I would like to see that more comprehensively between the utility and the private property owner, be it residential or commercial.

You know, the -- the university system -- IFAS, in particular, I know, has a lot of that information. There's already website information at IFAS that -- between, you know, trees and utility lines and so forth.

COMMISSIONER BROWN: That's not adopted statewide, though.

COMMISSIONER POLMANN: Exactly. It's -- it's not a statewide -- it's -- it's not, you know, geographically specific, types of trees and vegetation.

So, my suggestion would be -- and some of the utilities have links to IFAS, but it's not sufficient. I would like to see the utilities collectively and -- and the regulated utilities, we have that influence over -- but more-broadly, have the utilities provide more information on exactly what is their public-education program to the -- to private-property owners on vegetation that should be in or adjacent to the easements.

There are easements on private property. And you know, it's -- it's not just right tree in somebody's backyard; there's other vegetation that can be -- can be problematic.

So, I would advocate for a coordination through IFAS; and then, down to the county extension service, the development of some common education materials, some literature -- you know, if the -- if the utility comes to me and says, you know, there's a problem with the trees on your property, am I going to -- as -- as a homeowner, who already is annoyed with the utility because they didn't restore and I'm thinking they didn't do their job to manage the vegetation, I'm going to be hesitant to listen to them, for whatever reason, perhaps. But if they're providing me literature or

information that comes from the county extension service that was developed at IFAS -- it has a little bit more credibility, if I'm inclined to listen.

So, I would like to see some coordination from the utilities with the -- with the university and -- and again, this comes back to the cost issue, the same thing we talked about earlier. And this may be something where the Legislature or -- or, you know, state departments can come into play and see the value.

It becomes a statewide program. IFAS can develop regionally-specific education materials that's the right tree, the right place, the right vegetation, how to manage this -- provide that information for homeowners. You go to your local home-improvement location, the literature can be available.

I really think there's a lack of acceptance from private-property owners to even be interested in putting the right material, the right --

COMMISSIONER BROWN: Absolutely.

COMMISSIONER POLMANN: -- landscape material in the right place.

And then, direct the utilities to have a

specific web page of vegetation, vegetation management, and all this, and make it clear how that links back to the local-extension service, have some effort to have the local-extension service dedicate a page to that; have that link back to the university. This -- this is all a coordinated effort.

Now, is that an assignment for staff? I mean, we don't have somebody right now sitting here, an expert, horticulturalist, but I mean -- it's a big job, but I think it's less controversial than going to the Legislature and have them argue with -- with the local government, as much as I think that that's critically important, too.

Those are a lot of words. I'm sorry.

COMMISSIONER CLARK: And I think that -- both points are well-taken. I think they absolutely can be an essential part of the -- of the solution, going forward. And what you're suggesting is going to work in five to ten years, once the education programs --

COMMISSIONER BROWN: Right.

COMMISSIONER CLARK: -- are adopted and take place and we start to move consumers' hearts and minds. Yay.

The storm that hits next month -- it doesn't do us any good. The storm that hits us next year -- doesn't do us any -- it's not going to make a dramatic, immediate impact on what I foresee as -- I -- I don't disagree with -- your points are right on target. I agree with you a hundred percent. Great solutions. Great components of an overall solution to what I think is the single-biggest contributing problem to outage restoration in the state of Florida.

CHAIRMAN GRAHAM: Commissioner Fay?

COMMISSIONER FAY: Thank you, Mr. Chairman.

COMMISSIONER CLARK: Just say "amen" and move on.

(Laughter.)

COMMISSIONER FAY: I -- I planned on objecting to everything Commissioner Clark presented, but -- so, I think one thing that was important for me, going through the report and -- and as I'm listening to Commissioner Clark in some of these recommendations, including support of legislation, I kind of have the -- the little lawyer on my shoulder, right, saying, you know, what legally makes sense and what's kind of appropriate within the scope of what we have in front of us.

And so, I -- I thought that Commissioner Polmann and Commissioner Brown's comments were well-taken, as far as implementation of potential policies and information that staff could include based on our comments here today.

I do see -- and I might drag Director Baez into this one, but I do see the discussion of support of legislation, knowing that we're -- our authority is granted by the Legislature and some of the parameters that -- that apply to our operation -- that maybe we would look to see what the Legislature brings forward.

And -- and if the Commission had an appetite to -- to engage in that in a certain way, in some form of, I guess, formal procedure -- but I -- I actually -- I agree with the policy. I do have some concerns as far as including a recommendation like support of preemption in a report like this.

And so, I don't know if you would be open to -- to discussing it, sort of at an alternative point and -- and maybe we could take the recommendations, like a broader implementation of Right Tree, Right Place, to get the state kind of going in the -- the right direction because I think you're -- just real quick, your other point is very

well-taken, in that, hurricane season is -- it's here, right.

I mean, every year, as a state, we're impacted by these storms. And I do think there's -- there is a sense of some urgency to address some of these things. And I think -- I just -- I credit the Chair and the other Commissioners for engaging in this because I think it's -- it should be taken seriously. And I think it shows that, even within the Commission -- so, when I read something like underground-ing or -- or different options that apply, you see one argument, and then you -- you can see the next argument and the next -- and you can kind of go all the way from one spectrum to the other because it's such a -- a big state and it's so different in North Florida than it is in South Florida.

And so, I think some of the broader recommendations, to me, seem really appropriate. And I -- I do get -- I do have some hesitation as to providing those specifics into this report, but I -- I think the ideas that you present are good.

And to the Chair, I -- I would be open to discussing any of these further. I just don't know if -- if they're consistent with some of the

information, based on the hearings and what we have in front of us, and if it's the appropriate avenue to do so, but -- but I would like to at some point. I just --

COMMISSIONER CLARK: And that's -- I started my -- my remarks with that exact statement -- thank you, Commissioner Fay -- that I don't know if these need to be included as part of the report, if they are addendums. I think they are -- and I don't even know that -- legislative advocacy may not -- it's more of a policy initiative. And that's -- that's what I want to push is let's put the issue out there on the table.

The Legislature knows how we feel about it. They know it is a genuine concern. We've included it in our report that it is a problem. It becomes their choice as to whether or not it's addressed through the legislative process or whether we have to take it up through some other means.

So, that's -- absolutely.

COMMISSIONER FAY: Sure. Sure.

COMMISSIONER CLARK: I have no disagreement with that.

CHAIRMAN GRAHAM: Mr. Baez.

MR. BAEZ: Actually, I had a suggestion. I

mean, I think -- I think Commissioner Clark's points are good. And -- and the importance -- and -- and of stressing that that issue is meaningful is -- is probably a solution for -- for everyone.

We can -- we can argue about the language, but -- at some point, but I think there's -- I see it as two different things. We're not -- I would shy away from picking winners and losers, clearly, for reasons Commissioner Fay mentioned, but not shy away, necessarily, from stressing the importance of -- of the issue because that is something that came up and -- whether it was our data-gathering or our discussions, it came up at the workshop repeatedly.

So, there is a friction point there that I -- it's our responsibility to point out, with whatever level of intensity you all agree that -- that you want. There's no wrong in pointing it out. I think I would stay short of actually becoming involved in the issue because I think, as you -- as you can see --

COMMISSIONER CLARK: Agreed.

MR. BAEZ: -- it's not something we can reach.

A question about the statewide policy,

Commissioner Brown, that you had -- I guess the question I had, and I jotted down was, well, where -- where does the policy -- where does the responsibility for the policy reside.

COMMISSIONER BROWN: Absolutely. Well, I would probably ask the Legislature to look at the issue of vegetation management for a statewide policy.

MR. BAEZ: So, along the lines of the same kind of nature of a recommendation --

COMMISSIONER BROWN: Right.

MR. BAEZ: -- that -- that this is a critical issue that ought to be addressed.

COMMISSIONER BROWN: I think the Legislature should address it. So, we would --

MR. BAEZ: I --

COMMISSIONER BROWN: -- implore them, say, identify -- use some of the language that Commissioner Clark -- you know, this is strong language because we are -- I mean, it's a fact, based on our findings, that this is the -- the dominant issue --

MR. BAEZ: I agree.

COMMISSIONER BROWN: -- for restoration.

MR. BAEZ: And I think we had always

contemplated -- and certainly, in my discussions with you, we had always contemplated that there would be at least a list of -- of issues that are no less important --

COMMISSIONER BROWN: Right.

MR. BAEZ: -- to the overall, but that are beyond our reach. I think that -- that this is one of those things that we can, you know --

COMMISSIONER BROWN: Underscore it.

MR. BAEZ: -- with confidence, underscore, right.

COMMISSIONER BROWN: Yeah. I think this should be underscored, and then provide a suggestion, though; not just underscore the issue. The suggestion would be to implore the Legislature.

MR. BAEZ: Well, yes, that -- that's something -- I think if we identified it as something -- something for the Legislature to consider, just saying that, generally -- I think that that would also be able to wrap around Commissioner Polmann's suggestion because we do have statewide -- we do have resources that are available statewide that can be leveraged to do that, but I think we can put together sort of a -- a recommendation paragraph or -- or section that

kind of gets a little -- gives a little bit more emphasis and underscores the importance of the issue.

COMMISSIONER FAY: This is why we dragged you into this.

MR. BAEZ: I agree -- I --

CHAIRMAN GRAHAM: So --

MR. BAEZ: I will thank you later.

CHAIRMAN GRAHAM: So, we make sure that it's one of our findings that one of the biggest problems were vegetation management and that sort of thing. And then the recommendation would be, you know, Legislature's -- help us, you know.

MR. BAEZ: In a manner of speaking, yes.

COMMISSIONER BROWN: Yeah.

MR. BAEZ: That's -- that would be my suggestion.

CHAIRMAN GRAHAM: Commissioner Polmann.

COMMISSIONER POLMANN: To follow on from -- from your comments, Mr. Baez, I -- I think what we're discussing here -- and maybe some words -- I don't want -- I don't want to be too pointed.

MR. BAEZ: Understood.

COMMISSIONER POLMANN: There -- there's a conflict between parties that leads to a problem

with the vegetation.

MR. BAEZ: Yes.

COMMISSIONER POLMANN: The objective that the utilities are trying to meet is vegetation management, but they're trying to address it both in a space that they ostensibly have control over and to educate others within the -- within a space that they don't have control over --

MR. BAEZ: Yes.

COMMISSIONER POLMANN: -- in some regard, but to characterize it as a conflict between parties is a little bit tricky because then it becomes a pointing-finger issue.

So, I think the real conflict is between the parties' interests. Now, that's a nuance in language, but it's significant in how we characterize the problem because the problem is not with the parties; the problem is with the vegetation.

MR. BAEZ: I --

COMMISSIONER POLMANN: And the interest of the parties is also with the vegetation. You know, local government has an interest for their community in the landscape.

MR. BAEZ: Yeah --

COMMISSIONER POLMANN: So, it's the land- -- so, it's the --

MR. BAEZ: So far, I agree with everything you've said.

COMMISSIONER POLMANN: Right. So, I'm just saying, how we choose our words --

MR. BAEZ: Oh, yeah. I don't -- I -- I appreciate what you're saying. I don't think -- I don't think it has to get characterized as -- as, you know, this is -- this is, now, this crisis or certainly --

COMMISSIONER POLMANN: Right.

MR. BAEZ: -- however, the -- that there is an impediment or an issue that acts as an impediment to the utility's responsibility for vegetation management, which, then, affects reliability.

I mean, we can -- we can go A to B to C on this and how we characterize it. I don't have a problem with that. I -- I -- I appreciate the importance of not creating a conflict between parties where there may be none, where there's only an opportunity to kind of address an issue and resolve it.

COMMISSIONER POLMANN: And --

MR. BAEZ: So, we'll be very careful.

COMMISSIONER POLMANN: Yeah. Thank you. Because it gets back to -- to the question of what authority do we have and which parties do we have -- not rights, but where is it that we have power to address.

MR. BAEZ: Well --

COMMISSIONER POLMANN: And it's with the utilities over the issue of vegetation management.

MR. BAEZ: And -- and --

COMMISSIONER POLMANN: And what's come from our analysis here is the problem with the vegetation management --

MR. BAEZ: Right.

COMMISSIONER POLMANN: -- that the utilities cannot implement that assignment.

MR. BAEZ: Well, and I think -- and I think that's why I tried to characterize it as -- as an issue that came up at our workshops that -- that is a subject matter that we can't fully access because our jurisdiction doesn't --

COMMISSIONER POLMANN: Right.

MR. BAEZ: -- extend that far.

COMMISSIONER POLMANN: Right.

MR. BAEZ: Nor -- nor should it, but -- so, we -- we would characterize it as a -- as a -- I

keep say- -- I say, a point of friction, but it's certainly an issue that arose as -- as a part of our discussions and our research.

COMMISSIONER POLMANN: Thank you.

CHAIRMAN GRAHAM: Okay. We --

MR. BAEZ: And the recommendation would be that the Legislature kind of -- it's right for the Legislature to -- to address.

CHAIRMAN GRAHAM: Dead horse gone.

COMMISSIONER BROWN: Dead horse.

(Laughter.)

CHAIRMAN GRAHAM: Okay. Utility poles owned by other utilities -- do we have some sort of service-inspection program now for those poles?

MR. BAEZ: Tom?

MR. BALLINGER: No, for your -- like a pole owned by AT&T? No, we do not. We did -- in the old report --

MR. BAEZ: In --

MR. BALLINGER: -- we explained a little bit about --

MR. BAEZ: A little --

MR. BALLINGER: -- that we had jurisdiction to do inspections. We required it, and then legislation changed and removed our jurisdiction

over them. So, as of now, we do not have.

MR. BAEZ: I -- I would add -- and this comes courtesy of -- of Tom's explanation. I -- I do think that the -- going back to something that Commissioner Polmann said, the utilities have responsibility for reliability. They need to -- they need to manage that -- that situation.

So, I don't know if there's anything -- I don't know that there's anything we can do now to reconcile that, but something that Commissioner Clark had said about an inspection of program -- although, I -- I don't know -- that would certainly solve it. I think that there might be solutions.

And already, pressure exists. I mean, when -- when the utility is on the hook for their reliability and they've got non-utility facilities impacting it, they -- they -- they sort of work it out, you know. They -- they either buy the pole or they pole -- they -- they put their own pole next to it. I mean, I think the stories are --

CHAIRMAN GRAHAM: Well, you see it --

MR. BAEZ: -- well documented.

CHAIRMAN GRAHAM: -- all over the place. I mean, AT&T could own it or the municipality could own it or --

MR. BAEZ: Sure.

CHAIRMAN GRAHAM: -- different people. And they try to rent, so to speak, to use their pole.

MR. BAEZ: That -- there -- there are stories where the utility has replaced a non-utility pole out of necessity and billed -- billed the non-utility for it. I mean, they -- they have relationships, business relationships, as you said, among themselves that -- that -- that sort of address this.

I -- I wanted to say that one of things that came out in 2007, as part of the Commission's order, was an audit of those agreements and how they -- and how they function.

I -- I can't sit here and tell you I know what the audit resolved, but I think we might find some guidance there as to how -- you know, what the possible solutions or whether it rises, Commissioner Clark, to the level of -- of -- like what we're -- want to do with your first recommendation, you know, that rises to the level of, hey, Legislature, this is -- this is an issue that -- that you guys have got to -- got to address.

CHAIRMAN GRAHAM: Commissioner Brown.

COMMISSIONER BROWN: Thank you.

Part of the recommendation includes opening the storm-hardening plan-review dockets for all IOUs. So, as part of that process, could you conduct data discovery on shared-use poles and see if they are hardened or not hardened and whether the agreement provides the responsibility goes to the IOU or that -- do we have any of that data?

MR. BALLINGER: No, this issue came up late in the process of -- of a suggested change, when we asked utilities about this. So, we don't know really the -- during the storms, how many of these non-electric utility poles were impacted, first off. We --

COMMISSIONER BROWN: We still -- we still don't know that.

MR. BALLINGER: No. This came in late. So, I don't know how significant the damage was to those versus the utility poles.

For some utilities, the percentage of non-electric utility poles is quite small compared to the overall system. Gulf had the highest percentage, I believe, 37 -- so, we don't know how critical an issue it is.

We can explore it a bit, informally, to see

where it goes.

COMMISSIONER BROWN: Could we explore that, though, regard- -- regarding how many in the storm hardening --

MR. BALLINGER: Sure. We can -- we can go through that.

COMMISSIONER BROWN: I mean, that's going to be an issue for --

MR. BALLINGER: We --

COMMISSIONER BROWN: For many years.

MR. BALLINGER: We can -- we can get some --

MR. BAEZ: I think we can --

MR. BALLINGER: -- more information on it --

MR. BAEZ: -- information --

MR. BALLINGER: -- and -- and get a better handle on it. Quite frankly, like I said, this came in late. Staff didn't delve into it much. It was a suggestion by the utilities to -- to look at that. I don't know the significant impact of whether it rises to the level to go --

COMMISSIONER BROWN: Right.

MR. BALLINGER: -- to recommend legislation.

COMMISSIONER BROWN: That's what I was going to say. I mean, I don't know if we're at a point right now, because we don't have that data --

MR. BALLINGER: So, we can explore it in the hardening.

COMMISSIONER BROWN: Yeah, that's what I think, too.

MR. BAEZ: It -- it would be identified as an issue anyway, just with -- with a little bit less completeness --

COMMISSIONER BROWN: I think if we have it in the report, though, it shows that the Commission found it to be an issue from the --

MR. BAEZ: Fair point.

COMMISSIONER BROWN: -- in this docket, and so, has recommended to staff to look at the -- further in the storm-hardening dockets.

CHAIRMAN GRAHAM: Another dead horse.

COMMISSIONER BROWN: Yes.

CHAIRMAN GRAHAM: Hospitality.

COMMISSIONER BROWN: There you go.

CHAIRMAN GRAHAM: Lodging, food -- comments? Commissioner Polmann.

COMMISSIONER POLMANN: This seems to me -- really depends on the -- on the geographic scope of the storm. I -- I think it's important, but whether rises to the level of -- you know, a legislative issue or an executive-branch policy,

directive or -- or whatever, other than similarly identifying it as an observed challenge or issue -- I'm not quite sure what to do with it.

It's certainly beyond our jurisdiction, but -- the nature of the problem may be unique to -- or in direct relation to the geographic scope of the impact.

CHAIRMAN GRAHAM: Well, we heard --

COMMISSIONER POLMANN: And certainly, with the -- with the scale of the evacuations.

CHAIRMAN GRAHAM: We heard our IOUs say that they have contracts in place where, you know, they have certain hotel rooms and certain facilities that are there when they need it.

And we've also heard the nightmare stories where their bucket guys were sent out because there was a traveling baseball team coming through and -- you know, I -- so, I understand the concern and --

COMMISSIONER CLARK: It's not only the concern. It's the cost as well. And that's one of the things that I think we could help to address from an overall perspective.

I -- I think that -- I can go back -- you talked, Mr. Chairman, about wearing your other hat. In the days when I wore the other hat, I was the

one that made the decision when we booked the hotel rooms, how far in advance. When a storm hit, hundred miles out, do you begin booking, you know, hundred, 150 hotel rooms.

In this case, we had 27,000 people come to the state. Essentially, that's probably at least 10,000 rooms that had to be booked. And if you looked at the storm costs that was al- -- the storm-cost recovery that was allocated to lodging, it was a significant amount of money that we spent on lodging.

And I think that's where maybe we don't have necessarily a -- a great amount to do in terms of -- of, you know, getting rooms secured, but maybe we can work as a -- as a -- as an association -- or work with an association to help at least identify this is an issue. This is a concern.

Let's get the cost down. Let's don't -- if we have to cancel the hotel rooms, let's don't have booking fees and those kind of things. They're relying -- I mean, FPL stated they were relying on Travelocity or Travel Lodge or one of the -- the third-party folks to do the -- maybe that's -- you know, if they have that kind of power to negotiate,

maybe the state has a better power to negotiate rates under emergency actions.

CHAIRMAN GRAHAM: Commissioner Brown.

COMMISSIONER BROWN: I -- I don't see any harm. I only see the benefit on the upside, pursuing this objective. I -- really, I mean, it's no cost to the Commission, quite frankly. And it could help facilitate better communication, reduce costs that ultimately get transferred to the ratepayers. So, I think there's merit in -- in that suggestion.

Another suggestion -- another conclusion that was stated in the report, though, as an impediment was the roadway congestion and the procurement of fuel -- fuel. That was an issue that was identified without any suggestion or solution.

I know Irma was massive and unique, but we could have another Irma and be faced with this. We have to have a lesson learned that -- similarly to that lodging issue. And it's just something to throw out there.

CHAIRMAN GRAHAM: Well, that -- that's a finding that's here, but if I'm not mistaken, didn't the legislators take care of that during this last session? There was talk about putting --

MR. BAEZ: They --

MS. PENNINGTON: They talked about it. They --

CHAIRMAN GRAHAM: They --

MR. BAEZ: Didn't get anywhere.

MS. PENNINGTON: They didn't take any action.

CHAIRMAN GRAHAM: They didn't take any action.

MR. BAEZ: No.

MS. PENNINGTON: It was discussed.

MR. BAEZ: If I may --

CHAIRMAN GRAHAM: Sure.

MR. BAEZ: -- Chairman -- Commissioner Clark, I think, to your point, we've already -- I mean, I think -- I heard the word "facilitation." And I think that's that something that this Commission, and certainly the staff, is always ready to do.

I will tell you, as a -- as a side note, we've already engaged in some of that, not with the restaurant and lodging, but I think with the help of -- of our general counsel, to -- to facilitate meetings between or discussions between the utility industry and the Florida Healthcare Association.

So, I think the -- the -- the template already kind of exists and -- and we would be happy, you know, if anyone is listening, to -- to engage in

that kind of service, if you will, with the restaurant/lodging folks.

I really do think it's a matter of getting folks in the same room and having a -- a discussion so that everyone can see and feel everyone else's issue, and maybe some good can come out of it. So, we're always ready to do that. Thank you for offering that up.

CHAIRMAN GRAHAM: It's -- it's always a balance, though. You know, when a hurricane is coming through, you've got people coming up from the Keys looking for places to stay and then you have the people coming down with the bucket trucks looking to get everything up and running again.

(Simultaneous speakers.)

CHAIRMAN GRAHAM: That's to say -- that's -- that's the -- that's the balance.

MR. BAEZ: We're not requiring anyone to -- to have us facilitate anything, but I think, you know, as a -- as a public matter, we're available and we'll be happy to help.

CHAIRMAN GRAHAM: I mean, it -- we can definitely put it down as a finding because this was the problem and --

MR. BAEZ: Those -- those -- all those issues

have been identified. So, I think as -- in a -- in the interest of accuracy, pointing them out is not really what we're -- what we're talking about. It's sort of what we're going to do about it and -- and that really is the discussion.

CHAIRMAN GRAHAM: Okay. The last one for Gary is critical facilitates.

Commissioner Brown.

COMMISSIONER BROWN: Can you just restate what you would like to be included in the report?

COMMISSIONER CLARK: So, my suggestion is -- so, we've talked about critical facilities and critical infrastructure. And it's my understanding much of that burden has always been left to the utilities to identify the critical infrastructure; not their critical infrastructure, but to -- to accumulate and assess the data for the counties, to find out where the hospitals and -- you know, how many hospitals and did we miss one.

I think the burden of that needs to be shifted to the county emergency management director to be the one to identify critical facilities.

COMMISSIONER BROWN: So, that's not -- you don't think it's clear?

COMMISSIONER CLARK: I don't. And I may be

totally wrong.

MR. BALLINGER: No, I -- I think the burden, if you want to call it that, has been with the counties to identify, to meet with the companies, and -- and inform them, here is what we see as critical facilities. At those meetings, they may not agree.

A county may want to include a 7-Eleven as a critical facility and the utility say, no, that's -- you know, but they -- the county are the ones identifying it, where they are. So, that -- that process is going on now, is my understanding.

COMMISSIONER CLARK: I -- I'm in the wrong understanding because my understanding was the utilities were the ultimate ones responsible for keeping and maintaining that list of critical --

MR. BALLINGER: They --

COMMISSIONER CLARK: And when something closed or opened or it changed, that it fell on the utilities' responsibility to manage that process.

MR. BALLINGER: Once the list is created -- I mean, the utility is going back and saying, this is what we're seeing is critical, and we don't necessarily agree with the county on every one of them.

So, they have their list and looking at what feeders it serves and things of that nature, so when that restoration does hit, they know where to go. Something has been identified.

I believe it's up to the county, then, to update that as needed. And that's what these periodic meetings are for. That's why we recommended in the hardening plans that they give us more detail about these meetings and subjects that are --

COMMISSIONER CLARK: Okay.

MR. BAEZ: Right.

COMMISSIONER CLARK: Okay.

MR. BALLINGER: Yeah.

MR. BAEZ: I was going to say, that's kind of captured in some of our recommendations that you already have.

MR. FUTRELL: Right. There -- there's the mention in the first bullet of the staff memo, but I think the concept of that would be fully explored, that con- -- all aspects of that be concept be fully explored in the storm-hardening-plan docket.

MR. BAEZ: So, we can --

COMMISSIONER CLARK: It -- and I want to

different- -- the difference between the critical infrastructure and critical facilities. We have -- we have two different things. So, critical infrastructure, from a utility company's perspective, may be switch gears, substations, those kind of things. Critical facilities identified the hospital, the nursing home, the county EOC building, and those kind of things.

MR. BALLINGER: Right. And what that does is those facilities, then, can be located depending -- and figure out which feeders they're on and which laterals --

COMMISSIONER CLARK: Sure.

MR. BALLINGER: -- they're on and back up to the utility facilities.

COMMISSIONER CLARK: Okay. I'll -- I stand corrected. My bad.

CHAIRMAN GRAHAM: Commissioner Fay.

COMMISSIONER FAY: Well, I was -- it was just a -- addressed. I'm fine. Thank you.

CHAIRMAN GRAHAM: All right. Well, we're done with Clark. And it's your turn anyway.

COMMISSIONER FAY: Fantastic.

MR. FUTRELL: Mr. Chairman, if I may, I'm sorry. I just -- I was going through my notes.

There was one that Mr. Clark mentioned about the Governor's executive order, some language in that --

CHAIRMAN GRAHAM: But he was -- that was towards the hospitality.

COMMISSIONER CLARK: -- hotels.

MR. FUTRELL: Okay. Got it.

MR. BAEZ: Yeah, it was hotel --

MR. FUTRELL: Thank you. Sorry.

COMMISSIONER FAY: So, I guess just -- I think I only have one -- one specific comment to the report. It actually -- it's a follow-up on that first bullet point in the recommendations that talks about the meetings with local governments for tree trimming and identification of critical facilities.

My only, I guess, concern with this is -- is the tree-trimming component seemed a little bit too narrow, for me. I know we only have so much legal authority to -- to have a foothold to the municipalities and what their engagement level is with the utilities, but I thought that maybe -- maybe a broader recommendation of storm hardening and critical -- and facilities would be more appropriate.

So, I don't know if that's more wordsmithing than it is a discussion, but if anybody didn't have an objection to it, I thought that that would be better applied with a broader recommendation.

CHAIRMAN GRAHAM: Such as --

COMMISSIONER FAY: Such as storm hardening.

CHAIRMAN GRAHAM: Comments?

COMMISSIONER BROWN: Are you talking about this bullet, the first one?

COMMISSIONER FAY: Uh-huh.

COMMISSIONER CLARK: What page?

COMMISSIONER FAY: I guess it depends on which one -- it's says Page 2 at the top.

COMMISSIONER BROWN: So --

COMMISSIONER FAY: Right after the --

COMMISSIONER BROWN: So -- so, it says --

MR. FUTRELL: Staff memo.

COMMISSIONER BROWN: -- a listing --

COMMISSIONER FAY: In the staff memo.

COMMISSIONER BROWN: Commissioner Fay, it says: A listing of summary of meetings with local governments, regarding tree trimming, and identification of -- that one?

COMMISSIONER FAY: Yes. Yeah. So, I heard a lot of testimony or -- during our hearings

regarding the communication between the municipalities. And I -- I, just personally, speaking for myself, was a bit surprised and -- and somewhat disappointed that only a few municipalities responded to the request from the Commission.

I thought the ones that did participate were extremely beneficial for -- for me to have them there and to hear their -- their thoughts and -- and sometimes sort of see the other side of some of these things that might be presented.

And so, I -- within our legal lane, I -- more information regarding the -- the discussions or the meetings with those folks to lead to improvements, I think, is a key point -- component.

And I think it piggybacks off Commissioner Clark's point. Those -- those discussions between them -- it's even -- even with -- with the knowledge Commissioner Clark has in this, there's still some uncertainty as to exactly how the list is created and how it's changing.

So, I think all of that is good for us to -- to know that they're progressing on some of these issues because I -- just for me speaking, I would expect some improvement in those areas, after --

based on testimony that we heard.

CHAIRMAN GRAHAM: You have anything else on your list?

COMMISSIONER FAY: Huh-uh. That's it.

CHAIRMAN GRAHAM: Commissioner Polmann, do you have a comment on Fay's list?

COMMISSIONER POLMANN: Just a comment on that particular section. I see these bullets as falling within the step to open the hardening-plan-review docket. And that's specific to the -- the IOUs. And so, we're dealing here with the IOUs that -- that we're regulating and -- Commissioner Fay, I -- I see that first bullet as what are the IOUs doing with the local governments in their area of service. So, the burden is on the IOUs to be reaching out to the local governments.

So, I -- I'm not quite sure I'm understanding what else you're asking for. I'm seeking clarification from you on what else you're asking for there.

COMMISSIONER FAY: Sure. Mr. Chairman?

CHAIRMAN GRAHAM: Sure.

COMMISSIONER FAY: So -- so, the clarification is that it's -- the recommendation, itself, speaks specifically to tree trimming, right. And I think

those discussions that are being had between the utilities and the municipalities are much broader than that.

I was just educated here by Tom and -- and Commissioner Clark about the -- the process that goes into deeming a critical facility and how that is done and even how they keep up with that list.

And so, I think those are things that would be very beneficial for us to know and have a little bit more information on, even though our -- our legal footing is somewhat limited as to our engagement with municipalities, I think your -- your point is well-taken that the directive is -- is within the IOU and -- and that's -- that's our reach. And so, I think that's the -- the request.

COMMISSIONER POLMANN: Thank you.

COMMISSIONER FAY: Sure.

CHAIRMAN GRAHAM: Okay. You have something for Fay?

COMMISSIONER BROWN: Yeah, well -- well, it's about the storm-hardening plans because all of this is going to come up with the storm-hardening-review dockets. And my understanding is that that's currently scheduled to be opened in 2019; is that right?

MR. BALLINGER: They're currently scheduled -- they're on a three-year cycle. The last ones were May 2016. So, would be -- May of 2019 would be the natural cycle. Our recommendation is to go ahead and open the dockets now.

Staff can begin a dialogue with the utilities to get an understanding of this information; one, it is available; what format is it in; what's it going to take to get -- that kind of thing. And, then, perhaps, have the plans actually filed earlier than May --

COMMISSIONER BROWN: Great.

MR. BALLINGER: -- for approval, but the first step would be to get with the utilities and discuss these things of the information we want included in the plans; how it can be done, how soon, that kind of thing.

COMMISSIONER BROWN: Excellent.

MR. BALLINGER: Okay.

CHAIRMAN GRAHAM: Staff, clear where we are so far, as far as the stuff we talked about; what's going to be findings; what's going to be recommendations?

MR. BAEZ: (Nodding head affirmatively.)

CHAIRMAN GRAHAM: Commissioner Brown, you're

up.

COMMISSIONER BROWN: So, one last point that we haven't talked about, and it's regarding communication. And all stakeholders said that communication could be improved. And it seems that they're definitely deploying various means. There's a lot of lessons that were learned from each utility. Each utility faced different issues, but overall, communication can be improved.

I don't see any concrete recommendations in this recommendation --

MR. BALLINGER: No, and the -- the recommendation was the management audit to look at how restoration times are disseminated to customers. So, first, we wanted to look at the utilities' internal processes to see what improvements, if any, could be made. So, that's the recommendation that --

COMMISSIONER BROWN: Is to do an audit.

MR. BALLINGER: Yes.

COMMISSIONER BROWN: And that will address the communication.

MR. BALLINGER: Yes, ma'am.

COMMISSIONER BROWN: Okay. That's it.

CHAIRMAN GRAHAM: Okay. Commissioner Polmann?

COMMISSIONER POLMANN: Thank you, Mr. Chairman. I think most of my issues have been covered. I -- I appreciate you and your staff working on the executive summary.

I would like to suggest that we provide pretty broad direction and authority to our executive team working with the technical staff. And I know we're going to get to that here in a minute, but with regard to the key findings, in particular, on the executive summary, rather than my making specific suggestions here on some -- some word edits, perhaps -- and I've had some discussion with staff on this. There may be an opportunity -- some of these bullets may be consolidated a little bit, reworded, perhaps. I would like -- like to give them an opportunity to kind of do a little bit of editing here, if -- if --

CHAIRMAN GRAHAM: Wordsmithing is not a problem. I guess the question I have is, is there anything else that you think needs to be added to it?

COMMISSIONER POLMANN: Well, we've -- we've covered a number of things here in the discussion. I know they -- they all have been taking notes. So, I think that's part of it, to add some of the

things that we highlighted.

I don't want to -- I don't want to suggest we're going to end up with two pages of findings. That's not the intent -- or if it is, so be it, but I think pretty -- pretty broad direction to allow them to -- to work on this to consolidate what they can appropriately.

What I definitely hope we end up with is a -- front-end pieces here that everybody is going to read. You know, if we end up with ten pages of front material, nobody is going to take the time. You know, there's a certain limit to --

CHAIRMAN GRAHAM: Yeah.

COMMISSIONER POLMANN: -- the attention that the folks that -- that we want to read this.

CHAIRMAN GRAHAM: Summary is supposed to be a summary.

(Laughter.)

COMMISSIONER POLMANN: Yeah. Yeah. You know, whatever cover letter we have and -- and the executive summary and -- and the key findings, conclusions, recommendations, right up front, which I think is part of what you -- you are trying to do here.

CHAIRMAN GRAHAM: Yes.

COMMISSIONER POLMANN: So, to the extent that staff gets that clear direction from us, I think that's the most important part.

And then I would like to have an opportunity for -- for staff to visit with us and kind of let us know where we stand here, and then have your office do the -- do the final workup.

CHAIRMAN GRAHAM: Staff can independently go around and --

COMMISSIONER BROWN: Uh-huh.

MR. BAEZ: Yeah.

CHAIRMAN GRAHAM: -- poll each of the different offices, yes.

COMMISSIONER POLMANN: Yeah, and have us see what the final product is so that we're all kind of satisfied that -- that, from our discussions here, that we've covered everything and then -- and then Chairman's office have -- have the opportunity for -- for the final, if that's the pleasure of the Commission.

COMMISSIONER BROWN: Yeah. Yeah.

CHAIRMAN GRAHAM: Commissioner Brown.

COMMISSIONER BROWN: I would agree. I was just going to say that. That sounds like a great plan. I would ask -- like to ask, though, to have

the PSC legislative staff involved throughout this process. They've been involved. They've attended numerous committee meetings. And I think that they can provide a nice, different perspective. So, keep them involved, if that would be okay.

MR. BAEZ: Absolutely.

COMMISSIONER BROWN: Okay. Great.

And then also, I would like to note, there -- in the formal draft, there was a conclusion section. In the current draft, it -- I don't know if it was accidently omitted, but it was omitted along with the appendices, so --

CHAIRMAN GRAHAM: Those conclusions, appendices are all part of this.

COMMISSIONER BROWN: Okay.

CHAIRMAN GRAHAM: We didn't touch that stuff.

COMMISSIONER BROWN: Great.

COMMISSIONER POLMANN: In terms of -- one more point. In terms of that formatting, what I was meaning to convey -- I've seen -- I've seen documents, again, in -- in the executive context where, in addition to an executive summary and findings, that there is a -- a section with conclusions up front.

And I don't know if -- if the Commission is

amenable to that, but -- now, if there's conclusions that's multiple pages, that's a little bit much, but if we're trying -- something that looks like conclusions or -- or has the wording of a conclusion, whether that's part of the summary, I -- I try to see summary and conclusions as -- as different and, perhaps, distinct from action items.

CHAIRMAN GRAHAM: I -- I think you started getting -- to me, I think it starts getting convoluted -- you're going to have findings, recommendations, and collusion -- and conclusions.

MR. BAEZ: Commissioners, we've always operated on the, you know, principle that conclusions and findings are sort of the same thing. They should be included at the -- at the front end, as part of an executive summary. And -- and we can -- you know, we can make them part of the main body. That's -- that's not going to -- that's not going to be an issue.

The recommendations, on the other hand -- and I think Tom -- not to belabor the point. I think Tom was -- was pretty good on it, at the start of the meeting. The recommendations and -- and action items -- those are the real things that -- that you were going to say, yeah, do -- do or don't do.

Everything else is really just editing.

That's how we've been operating. If that's an approach that -- that is okay with you, then we can do away with, you know, some of the confusion as to findings and conclusions and whatnot.

COMMISSIONER POLMANN: You -- you've done this before. I'm good. Thank you.

MR. BAEZ: Sadly, yes.

Mr. Chairman, I -- I did have one -- I did have one thing. We -- we did -- the staff went over the draft of the key-findings section, and we wanted to -- we wanted to propose some -- some edits for charity and -- and context.

If -- but I think it's important for you all to be the ones that -- that are okay with them. So, I -- I see that as kind of falling a little bit outside the editorial privileges that, hopefully, you'll -- you'll allow us walking out.

Would it be okay for -- for Tom or I, or in conjunction, to try and go over these -- these suggestions with you?

CHAIRMAN GRAHAM: Now?

MR. BAEZ: Yeah, I think --

CHAIRMAN GRAHAM: Sure.

MR. BAEZ: I think it's important --

CHAIRMAN GRAHAM: Sure.

MR. WISEMAN: -- for you. We'll -- we'll be as brief as possible.

Tom, you want to --

MR. BALLINGER: Yeah, Emily is passing them out.

MR. BAEZ: Oh, okay.

COMMISSIONER BROWN: Oh.

MR. BAEZ: Great. Oh, good.

MR. BALLINGER: We're all good. And -- and a lot of this was more to match -- recognize, now, Chairman, that the -- the updated report maintain the conclusion. So, we kind of tried to look for some consistency things, if we could, and things of that nature.

So, under the first bullet, you see we added that there were no anomalies between utilities, and that it was the damage and infrastructure. When you compare that, that's where we're coming to that conclusion, there -- that it's a -- hardening is working.

The next two bullets, just making it clear that it was -- the first one was distribution facilities. There was one aspect. And transmission facilities -- there's two different

types of facilities, and it was hardened versus non-hardened, but underground facilities compared to overhead -- just to make that clear to the reader.

The fourth bullet, just put it in more -- easier terms of round numbers, approximately 40 percent -- just kind of change that number to there. And they're, you know, facilities, not -- just some -- some clarification there.

I think the fifth one, we wanted to point out it was customers who provided comments instead of just all customers, to make that very clear that we're basing this on evidence that we got, the information we got from customers. And they have high expectations for reliable service and prompt restoration. That's what we were proclaiming to us.

The sixth bullet goes to, I think, the issue about right-of-way -- and that it is the -- still the primary cause if it's outside the right-of-way and that, in some instances -- because there were a couple of utilities that had issues with their -- providing est- -- restoration times, and some of their computer systems were overwhelmed. It wasn't a widespread -- it wasn't statewide. So, we wanted

to make that very clear that there was -- there was some instances of those.

And the last one, we left.

COMMISSIONER FAY: Good point.

COMMISSIONER CLARK: Mr. Chairman, I -- I would make one -- one request, and that would simply be to -- under Key Finding No. 2, separate those and make that two findings.

MR. BALLINGER: For distribution and transmission?

COMMISSIONER CLARK: Uh-huh.

MR. BALLINGER: Sure. We can do that. We just --

COMMISSIONER CLARK: I --

MR. BALLINGER: I saw it as -- as together, but we can make it a separate bullet for transmission.

COMMISSIONER CLARK: I think it's really two very, very different issues. I think it needs to be pointed out. I -- it's -- it's important to me.

MR. BALLINGER: No problem. We just did overhead as one bullet and underground as another one. That -- that's fine. If that's your desire, we can do that.

From a report, it might get two breaks of page

or something, so we're kind of -- you know --

COMMISSIONER CLARK: One item on one --

MR. BALLINGER: I'm thinking that, too. So, we're -- we're --

COMMISSIONER CLARK: Shrink it down.

CHAIRMAN GRAHAM: Is it necessary to put all of this into key findings? I mean, I think we can consider this, but some of this is just --

MR. BALLINGER: I -- I worked off what was --

MR. BAEZ: We were working off -- we were working off the discussion --

MR. BALLINGER: Right.

MR. BAEZ: -- Chairman, so --

COMMISSIONER BROWN: Just a second.

MR. FUTRELL: These are edits, Page 1 of the discussion draft.

COMMISSIONER POLMANN: Mr. Chairman?

CHAIRMAN GRAHAM: Sure.

COMMISSIONER POLMANN: In terms of key findings, the items that are, I would say, data-related -- for example, the fourth bullet, talking about the extent of underground facilities and so forth -- that's a bit of information.

I don't know that it's a finding in terms of how we assess performance or -- or so forth,

compared to the second bullet, which is an -- an assessment, where substantially-lower failure rates compared to non-hardened -- that -- that's the comparison that, I think, was the point.

So, the fourth bullet, I -- I think, may be something that we can eliminate from this page. That's an example that I -- a change I would make.

CHAIRMAN GRAHAM: Okay.

COMMISSIONER BROWN: This is good. I like the first one.

CHAIRMAN GRAHAM: Sure.

COMMISSIONER BROWN: Tom, why -- and Braulio, why did you -- on the second bullet point, why did you spec- -- include distribution and -- are you saying transmission facilities did not --

MR. BALLINGER: There -- there was no -- the original one from here just had hardened overhead facilities had substantially-lower failure rates.

COMMISSIONER BROWN: You just --

MR. BALLINGER: We just pointed out distribution had this and then transmission had very few structures --

COMMISSIONER BROWN: Oh, there --

MR. BALLINGER: To make it --

COMMISSIONER BROWN: They're going to make

that --

MR. BALLINGER: We thought it added clarity.

COMMISSIONER POLMANN: -- a bullet.

COMMISSIONER BROWN: Uh-huh. Yeah, are -- should you make that a separate bullet?

COMMISSIONER POLMANN: We talked about that.

MR. BALLINGER: I was --

(Simultaneous speakers.)

CHAIRMAN GRAHAM: That's what Commissioner Clark just said.

COMMISSIONER BROWN: Where have I been?

COMMISSIONER CLARK: That's a great suggestion, Commissioner Brown.

(Laughter.)

COMMISSIONER BROWN: I have a -- a question regard- -- again, regarding communication, though. Back in -- in the key findings, you talk about consumer communications systems were overwhelmed, causing dissatisfaction, but you don't talk about all the mechanisms that have -- that the utilities are deploying as a result of Hurricane Irma.

Like the app -- one of the utilities was talking about the app that they developed as a result of -- of Irma. Do you remember that?

MR. BALLINGER: Yes. Now, you're going on to

future actions of what's happening. This is just a finding of what we found in the historic data, so we --

CHAIRMAN GRAHAM: Actually, they had the app before Irma.

MR. BALLINGER: Right.

CHAIRMAN GRAHAM: And the problem they ran into is because it got overwhelmed.

MR. BALLINGER: Yeah.

COMMISSIONER BROWN: They created something -- they created something new, though.

MR. BALLINGER: No, they -- they enhanced their software capability and -- and things of that nature. So, the communication outreaches were there. And that's what we're finding is social media is becoming more and more prevalent. And that's -- this is really a test.

You know, you look in the report, the data, it was some 13 million or something contacts. It was a ridiculous number.

COMMISSIONER POLMANN: The -- you assessed -- looked at data from multiple storms?

MR. BALLINGER: Yes.

COMMISSIONER POLMANN: The next-to-last bullet, with regard to the restoration times and

the -- the system being overwhelmed, was that specific or -- or more specific to Irma?

MR. BALLINGER: That only happened in Irma, was our understanding.

COMMISSIONER POLMANN: Should we -- should we clarify that? Is that --

MR. BALLINGER: We can.

COMMISSIONER BROWN: Yes. Yes.

MR. BALLINGER: Okay.

COMMISSIONER BROWN: I think we should.

COMMISSIONER POLMANN: The third bullet from the bottom, utility trimming -- and it speaks to you -- the right-of-way. I tried to highlight that in my -- in my discussion earlier. I think those are more correctly referred to as easements within the public right-of-way. So, the utility has an easement, the "utilities' easements" I think would be more --

COMMISSIONER CLARK: But in the some cases, the utility actually owns right-of-way. There's private -- private right-of-way ownership, too. You could use both terms, but I --

COMMISSIONER POLMANN: Yeah, I don't want to --

COMMISSIONER CLARK: I think "right-of-way' is

the generic term more so than the "easement."

CHAIRMAN GRAHAM: "Easement" is just somebody else's property that you get to use.

COMMISSIONER POLMANN: Okay. Well, y'all can decide.

COMMISSIONER BROWN: So --

COMMISSIONER POLMANN: But --

MR. FUTRELL: Perhaps -- perhaps keep "right-of-way" and not distinguish whether or not it's a utility or non-utility ownership.

COMMISSIONER BROWN: Since this is very fact-oriented --

COMMISSIONER POLMANN: Braulio and I talked about it; you guys can argue later.

COMMISSIONER BROWN: Yeah. Tom, since this is very fact-oriented -- you have a bullet that says customer -- you talked about, the customers who provided comments were dissatisfied, and the public has high expectations for reliable service and prompt restoration.

I think you should point out the number of customers that submitted comments. There were 701. And you know, obviously that -- that number is not slight by any means, but I think you need to point out the number of customers in the key findings.

MR. FUTRELL: I think it's in the report.
COMMISSIONER BROWN: It is, but it's not in the key findings. And you're making a very general statement here about customers being dissatisfied. And there -- so, I think you have to point out the number of customers that provided comments in that --
MR. BALLINGER: Well, that was -- not all of them were dissatisfied of the total comments, so --
COMMISSIONER BROWN: But your statement says that. The customers who provided comments --
MR. BALLINGER: Right, but --
COMMISSIONER BROWN: -- were dissatisfied.
MR. BALLINGER: You're asking for a number. If I provide the number of total comments, that kind of gives the reader, those were all the dissatisfied customers, and they weren't.
COMMISSIONER BROWN: I think some --
MR. BALLINGER: So --
COMMISSIONER BROWN: There's --
MR. BALLINGER: No, I'm --
COMMISSIONER BROWN: This -- this can be construed very gran- -- granular. And I think you need to point out somewhere in there that, you know, the Commission sought out comments from the

public -- 701 -- I know it's later, but you're making general assumptions from the comments the Commission received.

COMMISSIONER POLMANN: Actually, let me --

MR. BALLINGER: Maybe -- maybe something along the lines of, despite substantial and measurable improvements, of the 701 customer comments, who provided comments, some were dissatisfied with the extent of outages.

COMMISSIONER BROWN: Uh-huh. Uh-huh.

MR. BALLINGER: I mean, it -- something of that nature unless --

COMMISSIONER BROWN: Uh-huh.

MR. BALLINGER: Okay.

COMMISSIONER BROWN: There you go.

MR. BALLINGER: Okay.

COMMISSIONER POLMANN: There's actually, within that bullet, three points. So, I'm not quite sure -- you've got, despite substantial and measurable improvement -- so, you're trying to put it in context. Now, the issue of improvements is addressed elsewhere.

So, we're -- we're trying to couch the point that some customers were not happy. I think that dilutes the rest of the bullet. It -- it's kind of

a distraction.

If -- if we're talking about customers, I would suggest we just have that as a -- as a simple bullet. And -- and the last sentence -- I'm not even sure we need to say that at all. I wouldn't.

CHAIRMAN GRAHAM: I think we're trying to put too much into the findings.

COMMISSIONER POLMANN: Well, I would sim- -- if we want to make it a point -- well, to the Chairman's point, I would delete the entire bullet.

COMMISSIONER BROWN: The local government? That one?

COMMISSIONER POLMANN: No, the one that deals with customers being dissatisfied. Of course they are. There's a limited number. And the ones that you hear from are the ones that are unhappy. The second sentence -- or the second point there that there are customers who are dissatisfied with the extent of outages and restoration times -- yes.

COMMISSIONER CLARK: I think that's --

COMMISSIONER POLMANN: That's always the case. The people that lose power are unhappy. Do we want to try to quantify that? That -- I mean, that's --

I guess that's a question, but if that's the case, I would make that a singular point of one bullet. I wouldn't try to soften it up by saying there --

COMMISSIONER BROWN: Or get rid of it.

COMMISSIONER POLMANN: -- was substantial and measurable improvement or that they have high expectations.

There's never going to be a storm where everybody's expectations are met, which is, I didn't lose power; so, therefore, I'm satisfied. Somebody is going to lose power if there's a hurricane.

CHAIRMAN GRAHAM: Once again, if you guys just want to give me or my office the ability to wordsmith this because I don't think it's necessary to do it now.

COMMISSIONER FAY: So, do we need to do that on a motion or --

CHAIRMAN GRAHAM: Well, I have one last thing and -- before we're going to do a motion to accept the staff draft report. One of the things that the utilities talked about -- and you guys have been around me long enough to hear me say "Team Florida" all the time.

One of the complications that they had was

mutual-aid agreements. And they're doing much better now than they did before -- actually, I don't think they had any before Hermine. And I know the Governor helped facilitate the communication between the -- the IOUs and the munis and the co-ops.

But they're still running into liability insurance issues between those mutual-aid agreements. And I don't know if there is a way -- I mean, pie-in-the-sky dream situation is when the Governor signs the executive order saying that we're in a state of emergency, then that kind of handles all that indemnification issues.

And I don't know how that works out, and you guys are -- the legal minds know better. Is there a way to help facilitate that? I mean, because it just -- sometimes you just get -- you get bogged down on who's responsible and who's liable for, you know, people trying to do the right things for the right reason.

And if there's something that we can do or something we can ask for or encouragement we can give to the Legislature to help facilitate this --

COMMISSIONER CLARK: I would address one aspect of -- of the issue -- it was on -- that was

one of the ones on my list, too. And I chose to just put that one aside, strictly because it has -- from personal experience in looking at mutual-aid agreements in the past, it's very, very difficult to get those in place between the different business-structure types. The investor-owneds, I think, do a very good job of working within their group, the co-ops within their group, and the munis within their group.

The issue has been when the mutual-aid agreements are signed with investor-owneds and -- or the co-ops and the munis, the munis have an anticipation that some sort of indemnification, sovereign immunity will pass forward.

I don't know if that's a waive-able right or not. That's a legal term that you guys have got to do, but I also would just like to add that I -- and I won't say exaggerated, but I don't think the problem with mutual aid is as -- as big or as bad as sometimes it's made out to be.

There is a significant amount of resources that are available to each one of these groups. And I think sometimes there may be a hesitancy with one party to ask for their assistance that they might need or their ability to manage the

assistance that they -- they have available to them -- that's usually where their hesitation comes. I don't think that it is the amount or the number of resources that are out there and are available to each of the three groups, working within themselves.

And I specifically commend the Governor's efforts for coordinating some specific mutual-aid agreements between some of the parties that probably needed those in a very specific geographic area, but you know, having -- again, putting on that other hat, having looked at resource allocation and calling on those resources, there's no one in a better position to know and understand where the resources and what type of resources that they need will come from than that utility that's managing that outage.

You know, you've got -- one type of outage causes you a need for -- for a certain type of resources -- an ice storm versus a hurricane versus a flood versus a tornado -- there's three or four very different management techniques to managing that -- that restoration process. And just simply having a mutual-aid agreement with a neighboring utility doesn't always solve your problems.

I -- my assessment is that all of the utilities have a good system in place that manages that process; however, I would contend that, if you can eliminate the indemnification or sovereign-immunity issues, that may offer them some additional resources.

MR. BAEZ: Mr. Chair --

COMMISSIONER CLARK: I probably went too long on that --

(Laughter.)

CHAIRMAN GRAHAM: Well, that was my entire point. I mean, let's go back to Hermine. I mean, we had a situation, and it was right here in Tallahassee, where they didn't have -- they didn't have the facilities, and one of our IOUs had, you know, hundreds. And it's just you know, how do you -- how do you allow for them to tie into that without having those agreements in place.

MR. BAEZ: Mr. -- Mr. Chairman, I -- I think I recall at the workshop that -- that some of the stakeholders and presenters commented on that. They were -- they raised the issue, but they did also mention that there's progress happening between them to -- to sort out through the issues.

Might I recommend our acknowledgment that

it -- that it was -- that it's a subject of discussion --

CHAIRMAN GRAHAM: Yeah.

MR. BAEZ: -- and keep encouraging the progress that -- if that will solve your --

CHAIRMAN GRAHAM: And that's -- I think that's -- that's my only point.

MR. BAEZ: Okay.

CHAIRMAN GRAHAM: I -- I don't have the solution. I mean, once again, I defer to my -- to my -- to my legal colleagues that have more of that understanding than I do, but I just -- you know, it's something that -- it was a problem and it -- they're -- they're moving along, but it's still -- there are still issues there.

I mean, just as recently as two weeks ago, I was talking to one of the munis, and they still have that issue.

COMMISSIONER FAY: Yeah, I -- just real quick, I think, Mr. Chairman, there -- there are entities that are doing this. So, it's hard to believe that there is no way legally to do that that both sides can be comfortable with. I find that hard to believe. And during the testimony, I found that hard -- hard to believe.

To say, legally, you know, how the indemnification would apply, I think maybe one of the potential issues is -- is the -- the formal approval of the waiver of that right.

I think, you know, when the lawyers get into the room to hash out those agreements, the terms might be drawn up, but the -- the body, the municipal body itself, likely, is to -- I would formally vote on approval of agreement like that and some sort of waiver.

And so, I think, sending a signal that -- that we have an expectation that those will be encouraged and beneficial to the state, I think, is a -- is a -- is the right message to send. And I would -- I would support you in that -- that same tone.

CHAIRMAN GRAHAM: Commissioner Brown.

COMMISSIONER BROWN: Ditto, but -- with regard to how we're going to proceed ahead, there's been a lot of substance that was discussed here today. It's been such a great conversation, a lot of developments, new language proposed, new findings, new -- a lot of stuff. I don't know if it would beneficial for this -- I know our next IA is July 10th.

It may be better just to have it come back to us so that we all can get on the final product because there's -- seems like there are a lot of changes that are going to be in here.

I don't know if you have heartburn with that.

CHAIRMAN GRAHAM: No, I have no heartburn with that.

COMMISSIONER CLARK: I'm good with.

COMMISSIONER BROWN: I think it would be helpful to --

MR. BAEZ: Whatever the Commission's pleasure.

COMMISSIONER BROWN: -- because there are so many changes that are --

COMMISSIONER CLARK: We have a lot of data to --

COMMISSIONER POLMANN: I -- I would support that.

CHAIRMAN GRAHAM: Okay. Staff, do you need more specific direction?

MR. BAEZ: We're -- we're looking at -- we're looking at a calendar and trying to figure out whether --

COMMISSIONER CLARK: It's humanly possible?

COMMISSIONER BROWN: I just hope we get it right. I just want to get it right.

MR. BAEZ: Oh, yeah. I'm with you there.

MR. FUTRELL: It's going to be -- it's going to be tight. We may have to have a little -- a little understanding with regard to our normal large-item filing deadlines, but we'll make every effort.

MR. BAEZ: With -- with a little bit of leeway in terms of -- in terms of making the product available to you, we can -- we can probably meet that.

CHAIRMAN GRAHAM: Okay.

MR. BAEZ: So, next IA --

CHAIRMAN GRAHAM: All right.

MR. BAEZ: -- we'll tackle it.

CHAIRMAN GRAHAM: Okay. Anything else for the good of the order?

OPC, did you have anything to add?

MS. CHRISTENSEN: Yeah, we had filed some comments and a letter --

CHAIRMAN GRAHAM: Please come to the -- sorry, Patti.

MS. CHRISTENSEN: No problem.

We had filed some comments in the docket that were requested by some of the Commissioners at the workshop requesting our input on some of -- how

best to address whether or not the cost of -- how you would track the costs that are approved in rates are being -- meeting the storm-hardening plans.

And we had created some bullet points to address that and filed that within the docket. There just wasn't sufficient time to include it, I think, in the staff's report. So, it was just filed as a separate letter.

CHAIRMAN GRAHAM: Okay.

MS. CHRISTENSEN: So, that was what we had filed. I thought I had -- I did. I include -- I included copies of the letters. If you all want me to distribute that, I can do that -- or if you already have a copy of it --

CHAIRMAN GRAHAM: I'll have a copy of that, please.

MS. CHRISTENSEN: Okay. I'll just pass around -- I brought some extra copies. And I can provide some of that to staff as well.

COMMISSIONER POLMANN: I already have that.

MS. CHRISTENSEN: Oh, you already have that? But anyway, those -- those were the comments that we filed in the -- in the docket.

CHAIRMAN GRAHAM: Yeah, I've seen this.

MS. CHRISTENSEN: Okay.

CHAIRMAN GRAHAM: Okay. Thank you.

MS. CHRISTENSEN: Okay. Thank you very much.

CHAIRMAN GRAHAM: Commissioner --

MR. BALLINGER: I -- I have to say this: I did get input from one of the utilities, the co-ops, on the mutual-aid part of the report. We failed to mention that the co-ops have a group that deals with mutual aid.

I would like your permission to work that into the report as well, just to give them recognition. The IOUs have their process, munis and -- and the co-ops.

CHAIRMAN GRAHAM: Yeah.

MR. BALLINGER: Okay.

CHAIRMAN GRAHAM: That's fine.

Anything else? Last minute?

I -- I want to thank staff for this report. I mean, I -- there's a lot that went into this and a lot of tweaking and effort.

I want to thank my staff because there's a lot of tweaking and heartburn. I -- I know you put a lot into that Section 5. And that was one of the ones that I thought was critical, most of the underground-ing stuff.

And that all being said, we're adjourned. Everybody, please travel safe.

(Whereupon, proceedings concluded at 12:18 p.m..)

CERTIFICATE OF REPORTER

STATE OF FLORIDA)
COUNTY OF LEON)

I, ANDREA KOMARIDIS, Court Reporter, do hereby certify that the foregoing proceeding was heard at the time and place herein stated.

IT IS FURTHER CERTIFIED that I stenographically reported the said proceedings; that the same has been transcribed under my direct supervision; and that this transcript constitutes a true transcription of my notes of said proceedings.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

DATED THIS 21st day of June, 2018.

ANDREA KOMARIDIS
NOTARY PUBLIC
COMMISSION #GG060963
EXPIRES February 9, 2021