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In the Matter of:

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REVIEW OF ELECTRIC UTILITY HURRICANE PREPAREDNESS AND RESTORATION ACTIONS.

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COMMISSIONERS PARTICIPATING:	CHAIRMAN ART GRAHAM COMMISSIONER JULIE I. BROWN COMMISSIONER DONALD J. POLMANN COMMISSIONER GARY F. CLARK COMMISSIONER ANDREW G. FAY
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I N D E X

P R O C E E D I N G S

COMMISSIONER BROWN: Good morning, everyone. Welcome.

I would like to call this workshop to order, and first thank Chairman Graham for graciously allowing me to preside over this two-day workshop.

At this time, staff, can you please read the notice?

MS. GERVASI: Good morning. Pursuant to notice, this time and place has been set for a Commission workshop in Docket No. 20170215-EU, Review of Electric Utility Hurricane Preparedness and Restoration Actions.

COMMISSIONER BROWN: Thank you so much.

We have a variety of folks in the audience today, and I want to welcome you all here to our day one of our two-day workshop to review Electric Utility Hurricane Preparedness and Restoration Actions. And right now, I would like to give you kind of an overview of how we got here today.

As most of you know here, during 2000 -- 2004, 2005, Florida was impacted by multiple hurricanes and tropical storms, which resulted in billions of dollars of damage. The power restoration efforts ranged from a few days to up to three weeks.

Since that time, this Commission has been diligent in crafting policies, procedures with the goals of minimizing damage and restoration time, while also minimizing the resulting rate impact to customers around the state.

Some examples of the policies this Commission has enacted are regular vegetation management trimming schedules; pole inspection replacement programs; annual monitoring of hardening efforts; annual hurricane briefing -- briefings, and increased customer outreach.

Now, this is a very important week for our state. While here, we have a two-day workshop, utilities are also preparing their own hurricane drills throughout the state. And operational preparation is not just during hurricane season, as we know, it's a year-round activity for all of you in the room. So thank you for the efforts that you have done.

Florida IOUs have been recognized as leaders in the area of storm restoration throughout the country. Other utilities, municipals, co-ops around the United States really rely on Florida's knowledge and experience when faced with restoring the power grid following, not just a hurricane or

tropical storm, but any natural disaster.

Over the last decade, Florida was fortunate not to have been hit by major hurricanes up until 2016, when Hurricanes Hermine and Matthew impacted our state. However, on September 10th of this past year, Hurricane Irma hit Florida and left wide-spread damage, which impacted every county in the state, resulting in the first major test of the state's electric infrastructure in over a decade.

On October 3rd of that -- of last year, we opened up this generic docket to review the electric utility storm preparedness plans and activities, as well as efforts to restore service to customers.

This review will also give the Commission an opportunity to explore the potential to further minimize infrastructure damage, resulting outages, as well as recovery times for customers in the future.

And finally, this review can be used to critically assess the Commission's policies and procedures for improvements and efficiencies.

This generic docket provides a public accessible vehicle for the Commission to seek and collect information from all electric utilities and

stakeholders, as well as customers. And on October 9th of last year, the Commission invited customers to submit comments in this docket about hurricane response and restoration efforts. We had a link, and we still do, on our website. And to date, we have received over 700 comments from customers.

So today's workshop will provide us, the Commission and staff, to engage in an informal dialogue with utilities in order to gain a better understanding of the utilities' experiences in an effort to identify options for future Commission actions.

So to give you all an idea of today, we will be taking about two to three -- every two to three hours, we will take about a 10-minute break, and we will recess for lunch, which will be about an hour, at a natural stopping point.

And, Commissioners, if there are any other opening comments to make. Seeing none, we will go ahead and move into public testimony.

At this time, are there any members of the public here who would like to address the Commission? Going once. Going twice.

Seeing none, we will move into the staff

presentation, which will be given by Mr. Tom Ballinger.

And before staff or the utilities go with their presentations, I want to let the Commissioners know that since this is a workshop, please let me know if you have any questions at any time rather than reserving them for the end of the presentation, just feel free to let me know, and you can ask a question any time you want.

With that, Mr. Ballinger, you may begin.

MR. BALLINGER: Good morning, Commissioners. It's good to see you all again.

As you said, Tom Ballinger, Director of Division of Engineering with the Commission.

What I have got for you today is a brief overview of how we got to where we are, and what the original findings were. I will go through pretty quickly so we can get to the meat of this workshop, which, as you said, Commissioner Brown, is to have a dialogue with utilities.

Let me remind you, this workshop is really for you. Our staff has been working with this issue for the past six, seven months, so we are -- we have the data we need and collect the data, stuff like that. So this commission -- this workshop is

really for you to ask your questions and engage in a dialogue to further gain some knowledge.

Real quick, we will go through what storm hardening is; what it means; what it is not; a review of the review process that we went through; some summary of our findings; and then the workshop structure for today and tomorrow.

A little history, Section 366.03, Florida Statute, requires utilities provide reasonably sufficient service at rates that are fair and reasonable. That requires the Commission to do a balancing act. The utilities have to do a balancing act between reliability and cost of service.

As you said earlier, our goals in storm hardening were to do that, to help further strengthen the infrastructure while minimizing rate impacts to customers. So that's the goal of storm hardening, is to achieve that balance.

What storm hardening is not. It is not a total prevention of outages. It will minimize some outages, but it is not the silver bullet. So despite reducing outages, there will still be restoration costs beyond. You see there is a picture on the left is an underground circuit that

was uprooted by trees. On the right, you see a concrete pole which people will think is hardening. It fell down and collapsed. Could have been from wet soil. Could have been trees coming down, a variety of things, but storm hardening is not going to prevent every outage.

Now, a quick overview of our review process when staff went through.

Once the docket was opened, we have collected data from all 57 utilities, IOUs, municipals and cooperatives alike. What staff was looking for was any consistencies or inconsistencies between utilities and comparisons among the different industries.

Our objective was to identify options and changes we could make to our policies, procedures and utilities activities to help minimize outages and increase restoration times.

We are also looking at our rules and our filing requirements to see can we make any improvements there.

We issued three sets of data requests, about 60 questions to all those utilities. The Office of Public Counsel was also intervened in this proceeding, and they issued interrogatories to the

investor-owned utilities alone.

As you said, their customer comment portal was opened on October 9th. We solicited inputs from also stakeholders, such as Chambers of Commerce, local businesses, League of Cities, things of that nature, and that was on December 9th.

The portal was closed on May 1st. We have to have a cutoff date to start finally tallying this information, but I will get to that a little later.

Basically, we found no anomalies between utilities about outage causes. It was all pretty similar, and the restoration times were also comparable.

All utilities have similar staging, damage assessment and workload management processes.

Again, the primary cause of outage was wind and windblown debris, mainly trees outside the right-of-way, and flooding. This is similar to the damage that we saw in '04 and '05 hurricanes.

Transmission structures generally performed well during these storms. We had a handful of affected facilities, but some of them did affect wholesale customers, Munis and Coops. They are transmission -- most of them are transmission dependent utilities, and require on the IOU's

transmission system to serve their retail customers.

Good news during recovery efforts, you had a large contingent of crews from outside the state and outside the country even, as far away of Canada, only reported 98 injuries, and no fatalities. When you look at the damage and the debris around, and the hazardous working conditions, that's a pretty amazing feat.

On a macro level, I think staff could come to the conclusion that it looks like hardened -- our hardening policies have worked. There was some irregularities, or lack of granular data that staff would have liked to have seen, but I think when you step back and look at the bigger picture, I think we can make the conclusion that it looks like our policies are working.

One other thing we found is under our current pricing policies, where the requester of underground pays the differential for overhead, installation of underground has been growing steadily, but it's mainly been in new construction, is where we have seen the growth there.

Most common impediments to restoration time were debris removal, which is similar to other

hurricanes. For Irma, we had the other additive of local traffic issues, and I should also add to this, fuel.

On the customer portal, we had over 700 customer comments come in. Most of them were the majority were for the IOUs, and some refer to Munis and Coops. This -- this was surprising to me. We actually had 10.6 percent comments were positive, that they gave an attaboy to the utilities for their responsive efforts. We were used to seeing mainly negative comments.

Common themes were frustration with timely communication, cost responsibility for restoration and support for solar distributed generation.

COMMISSIONER BROWN: Tom, can I stop you there real quickly?

MR. BALLINGER: Yes, ma'am.

COMMISSIONER BROWN: Regarding the most common impediments to the restoration time, it says debris removal and local traffic issues. So these are -- it's kind of outside the scope of the PSC's jurisdiction, would you agree, those two issues?

MR. BALLINGER: Yes. Let me back up.

The debris removal, when I said not trash on the side of the street, but just trees in lines,

and getting that cleared, it takes time before you can actually work on the facilities. And that's common for other storms we had, too.

COMMISSIONER BROWN: How can we improve, or how can we effectively improve on these issues, though?

MR. BALLINGER: That's -- that will be coming later in June. And, yes, if these were out of right-of-way trees, let's say, yes, that is outside of our jurisdiction. So in other words, if a utility trimmed its right-of-way, but a tree that was outside of it fell in, there is not much we can do. That requires a coordination between the utility and local governments.

COMMISSIONER BROWN: Chairman Graham.

CHAIRMAN GRAHAM: Tom, so I guess the question is, how do we know how much of this is actually tree debris that's actually in the right-of-way or it's stuff that's just still sitting around?

I can just tell you from the local government, one of the biggest complaints you get is -- because that stuff is going to sit around for weeks sometimes before somebody comes along and picks it up, which it's not -- you know, which is not the responsibility of the utility. And I guess I am

trying to figure out of these complaints you are talking about, which is which, or do we know?

MR. BALLINGER: This wasn't a complaint. This was an observation in the field of what impeded the restoration efforts. That was where our question was at, is how -- did something slow you down from getting the power back on. They probably cut the debris and laid it on the side of the road and fixed the facilities and went on their way. After that, that is a local issue to remove the debris. That's not what we are talking about here.

CHAIRMAN GRAHAM: Okay. Thank you.

MR. BALLINGER: Does that help?

COMMISSIONER BROWN: Yes.

CHAIRMAN GRAHAM: Yes.

MR. BALLINGER: Okay. Now we can move on to the workshop structure.

In the agenda, it shows day one, we are going to hear from the utilities today. They are going to provide you a 10-minute overview of these topics.

Afterwards, there will be questioning, and we will probably go by these topic areas to help facilitate discussion.

Day two, we will hear from the nonutility

stakeholders, such as Office of Public Counsel, some -- there is a city, a few city representatives will talk to you as well.

After this, all of this information is final, staff is preparing a report and will bring it to you to the June 19th Internal Affairs that's currently scheduled then, with some recommended future actions. It may be other dockets, it might be suggested legislation, other activities.

So with that, I will end. If you have any questions for me, I will take them now or at any time during the day.

COMMISSIONER BROWN: Commissioner Polmann.

COMMISSIONER POLMANN: Tom, can we go back to your page six, please?

I believe I heard you, in reference to these comments, something to the effect of damage more recently, perhaps within 2017, being similar to earlier years, like 2004, '05, or thereabouts.

And the term similar, did you mean the type of damage, meaning here, like, the wind, windblown debris, and so forth, and not the degree of damage? Could you clarify on that?

MR. BALLINGER: Correct. It's the type. It's the cause of the damage. It's wind and windblown

debris, mainly trees falling down. I will say, probably in this storm, less wind only damage, partially from our pole inspection program. In '04 and '05, there were a lot of rotted poles that were still standing before the storms came, but blew over during the storm with wind only, no trees impacting them.

Since then, I think our pole inspection and replacement program has done a good job of replacing those poles before they were subject to fail to wind only, and we saw there is evidence about a lot less poles replaced during Irma than there were during, let's say, Wilma.

COMMISSIONER POLMANN: So this is back to your point, that in a severe storm, there will be damage, and a lot of that is related to wind and so forth. And, quite frankly, I guess what you are saying is that some of that is unavoidable, but the extent of the damage, because of the hardening, is what we are really examining. Is how is that different? Am I understanding that right?

MR. BALLINGER: Correct, and I hate to make a comparison to past storms on the amount of damage because every storm is different.

COMMISSIONER POLMANN: Yeah, okay.

MR. BALLINGER: I will also say that hardening was never intended to design against trees falling, as I said earlier in my slide. So even though they are a hardened system, if a tree is into the right-of-way, it's -- or into the lines, it's going to come down. You can only do so much to protect against that.

COMMISSIONER POLMANN: Thank you.

COMMISSIONER BROWN: Commissioners, any other questions before we move on to utility presentations?

Okay. Seeing none. Thank you, Tom.

All right. The order -- the utilities have filed PowerPoint presentations in this generic docket concerning their storm preparedness and restoration activities, and we are going to be hearing from each of the presenting utilities. They will have an opening statement to give regarding these activities, and the order will go as follows: Florida Power & Light, Duke Energy, TECO, Gulf, FPUC, FECA, followed by FEMA.

Commissioners, as I stated please feel free to jump in if you have a question, just let me know, and staff will be asking questions following the conclusion of all of the presentations.

So with that, we will begin with Florida Power & Light. Welcome.

MR. OLNICK: Thank you. Good morning, Commissioners. I am Bryan Olnick, and I am FPL's Vice-President of Distribution Operations, and I am glad to be here presenting on behalf of Florida Power & Light.

And just as we did after the 2004, 2005 storm seasons, we are looking forward to partnering with you at this workshop, and beyond, to continue to make sure we can improve and respond to storms.

While we believe the actions taken following the 2004, 2005 storm seasons have provided significant improvements and excellent results to date, we do recognize our customers desire even better performance. And since Florida is more susceptible to hurricanes than any other state, we must continue to be a leader and vigilant in preparing and responding for storms.

So our first topic is damage outage prevention and storm restoration. Now, that covers a lot of ground, so let me start with distribution transmission hardening, where we've made great progress. For critical infrastructure feeders and community feeders, we are 95 percent complete with

the remaining expected to be hardened by the end of this year.

In 2016, FPL broadened the scope of its feeder hardening process to address the remaining 60 percent of our non-hardened feeders in our system, and our entire feeder system is expected to be hardened or placed underground by 2024.

Keep in mind, as Tom said, hardening will not prevent all outages; however, our forensic data does confirm that hardening facilities mitigate infrastructure damage and provide for faster restoration.

In 2014, we completed installation of flood monitors in more than a third of our substations.

On our transmission wood structure replacement program, we are happy to say it's almost 90 percent complete.

Restoration has also benefited from Smart Grid. With over 83,000 Smart Grid devices, we were able to avoid 118,000 outages in Matthew, and over 546,000 outages in Irma.

COMMISSIONER BROWN: Could I just stop you a moment?

How do you -- how do you quantify that?

MR. OLNICK: The way we quantify that --

COMMISSIONER BROWN: The metrics.

MR. OLNICK: Yeah, the metric -- is in -- if -- if an outage -- if, let's -- let me use an example.

If a tree was to fall on a line, and we could restore that line quickly using automation and prevent the outage in a matter of seconds, we can measure that, and so that's an outage we avoided.

COMMISSIONER BROWN: So has it -- the avoided outages, as a result of the Smart Grid technology that Florida Power & Light has implemented, is that because there are more smart meters?

MR. OLNICK: It's the combination of smart meters and, in this particular case, the more active device that helped that was our automated feeder switches that we are putting on our mainlines. We have -- just over the last many years, we've installed several thousand of them. Our goal is to have them in all feeders here over the next couple of years, and so it allows the grid to somewhat reconfigure almost on its own to sense a fault and to eliminate outages as quick as we can, and isolate them.

So that was probably the main -- one of the key drivers for the reduction in these outages.

COMMISSIONER BROWN: How do the smart meters interplay during the storm?

MR. OLNICK: In a lot of ways, and in different -- in different stages of the storm.

Smart meters are -- have become a key element in day-to-day restoration. I think smart meters -- to help clarify, smart meters need power to transmit, and so day-to-day, they provide us a wealth of information.

During the storm, initially when there are millions of customers out of service, the information we get back from them the first hours, and maybe the first day, is somewhat limited. But as we continue to restore power, they allow us -- we can ping them. It gives us the ability to see who's in power and who's out of power. It helps us determine if there are nested outages.

Our crews, when they are working in a particular area, as they restore that area, they can ping devices in that area to make sure, before they leave, they didn't miss somebody.

So it -- as you go through the process, they become more and more valuable in the restoration.

COMMISSIONER BROWN: That's excellent. Thank you.

MR. OLNICK: Uh-huh. Thank you.

Our next area in kind of technology is the increasing use of drones, too. It also allows us to more quickly assess damage. They were very -- they are very relevant, especially in Irma.

Smart meters, as we have just discussed, have also become a very valuable tool in reducing restoration times.

Pole inspections. The Commission's mandated pole inspection program has been instrumental in reducing the amount of pole failures experienced during Matthew and Irma.

We completed our first eight-year pole inspection cycle in 2013, and are on schedule to complete the second cycle.

For vegetation management, we continue to execute our approved trim cycles, mid-cycle trimming, hot spot trimming and customer trim requests.

We promote FPL's Right Tree, Right Place initiative with our customers and local governments. Although, unfortunately, we have encountered some resistance from a few local governments on this initiative.

As discussed earlier, storm preparedness is

really a key element of restoration performance, and something FPL focuses on year-round through its planning. It includes our annual training for all of our storm roles; our annual corporate dry run, which is going on this week; and a simulated staging site exercise.

In Matthew and Irma, FPL pre-staged more resources than ever before, and overall restoration time significantly improved versus Wilma. So some examples:

In Matthew, we restored 99 percent of all customers in two days.

In Irma, we restored 50 percent of customers in one day.

And you compare that to Wilma, when it took almost five days to restore 50 percent of the customers.

Also in Irma, which impacted a much larger area than Wilma, we restored all customers within 10 days versus 18 days it took in Wilma. This shows our investments are really paying off for our customers.

Our second topic is infrastructure performance, specifically hardened versus non-hardened.

Hardened distribution and transmission facilities perform significantly better than non-hardened facilities during both Irma and Matthew.

For distribution, during Hurricane Matthew, zero hardened poles failed and had to be replaced in order to restore service. And during Irma, only 26 hardened poles failed and had to be replaced to restore service.

Now, compare those numbers to the results of non-hardened distribution poles during Matthew, 408, and during Irma, 2,834 non-hardened poles failed and had to be replaced to restore service.

The total amount of poles replaced during Matthew and Irma was significantly less than Wilma. In Wilma, we had more than 12,400 poles that needed to be replaced. And I credit that improvement, not just to hardening, but also to the eight-year pole inspection program.

Hardened feeders had fewer outages and restored in half the time as compared to non-hardened feeders.

For our transmission, again performance was excellent. Zero hardened transmission structures failed during Matthew and Irma.

Additionally, our flood monitors devices allowed us to deenergize several stations and prevent significant damage.

The third topic focuses on comparing our overhead facilities performed versus our underground facilities during both Matthew and Irma.

Our underground facilities performed extremely well compared to our overhead facilities during these storms, which was expected, given the primary cause of the overhead outages in both Matthew and Irma was vegetation. Much of which was outside of our easements and public rights-of-way, and beyond areas we are permitted to trim. And no amount of trimming by FPL would prevented damage caused by these uprooted and fallen trees, and broken tree branches from a distance.

During Matthew, underground feeders and laterals performed approximately 95 percent better than overhead. And during Hurricane Irma, they were approximately 80 percent better.

The fourth topic involves identifying impediments encountered during storms, trees in roadways, flooding, storm surge, debris removal, traffic congestion, they all delayed restoration.

The fifth topic concerns customer and stakeholder communication. For storms, we leverage all possible channels to ensure we are properly communicating with our customers and stakeholders. And as you know, communication methods have changed significantly since that destructive 2004, 2005 hurricane season. Smart phones and social media are now really key tools of communication with our customers.

Irma's impact helped us identify some key opportunities to improve communication. Our website and digital systems experienced unprecedented customer traffic, which caused website performance issues, and affected our customers' ability to get information.

So we've completed our initial system improvements to ensure that capacity of the digital systems can now handle extreme volumes of customer traffic even beyond the volumes we experienced during Hurricane Irma. But we are working on solutions to provide more timely and accurate restoration information to our customers and stakeholders during restoration. And we are now improving our ability to coordinate multiple information systems, including bringing in outage

tickets, using smart meter data and other systems all together.

The last topic was key improvement opportunities, and we have three.

The first involves our new three-year underground lateral pilot program, which we are pursuing largely based on the lessons learned from the excellent performance we had of our underground facilities during Matthew and Irma. We expect that this pilot program to provide valuable insight on a whole host of issues on undergrounding.

Our second suggestion is for advocacy at the state and local level to adopt and enforce our Right Tree, Right Place philosophy.

And the third improvement involves reintroducing the requirements of the eight-year pole inspection program on telephone companies that own poles with electric facilities. Reintroducing these requirements would ensure that all poles with electric facilities attached meet applicable standards for electric utilities.

And that concludes my presentation. Thank you, Commissioner and staff.

COMMISSIONER BROWN: Thank you.

I believe there is going to be a few questions

here.

Commissioner Polmann.

COMMISSIONER POLMANN: Thank you, Commissioner Brown.

I would like to ask -- and this is directed to all of the utilities in this particular segment, so I am not looking for an answer right now, but -- and also to staff, if you would please pose a question when you get to your section, but I am going to put this on the table now so you can be thinking about this when staff -- and they may already have this question.

But what I heard in your presentation was mention of relationship or coordination issues with some local governments. And we've heard some about this. And I think this is on our mind at this point and -- so without specifics, I am not talking to examples. We are not here to deal with the specific issues that any of you may have with a particular local government. That's not the discussion for today.

But what I would like for you to consider, and provide to staff, is actions that you think, from your experiences, would be most helpful to address the sticky relationship issues that you are having,

or anticipate, with a local government from your experiences. So actions that you think would be most helpful, and the question is in the context of coordinated assistance from third parties. You alluded to that here just a moment ago.

So between the utility and the local government, what type of assistance from third parties, be it from the Commission, from higher level governments, such as the State, or from others who could assist?

I mean, there are issues that you are dealing with that seem to be problematic. So moving forward, there are things that need to be resolved. So what third-party, and what kind of action would be helpful that we may be able to facilitate, or somebody else may be able to facilitate, or we could help directly. So I don't know what that is, but I think we need to identify those things. We would like to hear them.

Now, at least some thought about that -- that we can pass that on to staff, and maybe something can move forward. And staff already has some ideas in mind. We may have some things in mind.

So I will just leave it there. Please be thinking about that, and whether you can provide a

specific response to that today, or kind of allude to it and get back.

So thank you, Commissioner Brown.

COMMISSIONER BROWN: All right. Commissioner Clark.

COMMISSIONER CLARK: Thank you, Madam Chair.

Just kind of a broad statement to begin with for all of the utilities involved. First of all, I want to commend you all on the safety record that we achieved during these storms. The number of workers that we had in the field, and the safety record that was displayed is very, very impressive, and that goes to just a testimony to the amount of work that each of your companies have put in to making safety the number one priority of these men and women that are in the field trying to restore service during these dangerous times. So I want to go on record first of all saying that.

I have a question for each of you, and it kind of plays a little bit off of what Mr. Polmann had asked, but specifically related to the role that this Commission plays in these procedures.

I would like a very short, succinct answer to what is the one thing that this Commission can do to help you, as a utility company, to restore

services better, faster, what is the one thing that we can do to assist you in this outage management process during major storms?

Mr. Olnick, I will -- since you are on the fence already.

MR. OLNICK: I wish I could have two, because --

COMMISSIONER CLARK: Give me two, if you have two on the top of your head, absolutely, please give them to us.

MR. OLNICK: Well, I know I'm probably putting someone on the spot, but of the three that I did mention, in our system, we have approximately 1.2 million of our own poles, but we have about over 200,000 other utility poles that we are attached to, and they are very much a weak link in our system.

And I know that, in my remarks, I suggested that we reconsider either reinstituting a pole inspection program, or something else, for those other utilities, because that is a weak link in our system.

The second one, if I had the chance, and this gets back to, I think, Commissioner Polmann's request, too, is we are working closely with some

of our local municipalities and governments on helping us put some more firm regulations in place for Right Tree, Right Place, so that there is some recourse if you don't abide by the local ordinance, but that is always a challenge for us.

And so that's -- those are -- if you were to give me the second one, that would be my second one.

COMMISSIONER CLARK: And a follow-up question -- thank you for those answers.

Does FPL keep some -- an individual in each of the EOCs that are activated during a storm?

MR. OLNICK: We serve 35 different counties, and during Irma, we had staffed, I believe it was 28 or nine, only because of the remaining four or five, they are in counties where we have maybe less than 100 customers. And so those -- those we maintain contact with the EOCs, but those we did not staff. All of the other ones, we staffed.

COMMISSIONER CLARK: Okay. And my final question is related to the critical facilities list that FPL maintains.

Would you see any advantage in shifting the responsibility for the maintenance and management of critical facilities list to the EOC and away

from the utility companies?

MR. OLNICK: The -- when you say the management of the list, maybe I can describe to you the process that we go through every spring. And we just completed that process once again, where we will meet with the local representatives of the EOC.

When we have that meeting, and we identify our critical infrastructure function list, we go into that meeting having already pre-identified acute care facilities and 911 facilities in that county. So those are our coming-in list that we are already saying whatever you say or not -- we are including those right off the bat. Then everything after that, it's really up to the EOC in our discussion with them to choose.

We have a definition of what we consider critical infrastructure functions. It could be anything from a water treatment plant, to a jail, or whatever that county thinks is the most critical for that particular county, and then it's essentially their list.

We will manage it for them, only because we need to know where those facilities are and what they are located on, but it's -- beside the upfront

choosing of acute care and 911, which we -- those are ours to define, all the other ones, it's really essentially their list.

COMMISSIONER CLARK: And they prioritize the restoration of those critical facilities for you?

MR. OLNICK: They -- they -- we agree to what that list is. And then in our restoration process, they are all looked at based on kind of a level of what they are. And so they get prioritized based on what kind of critical infrastructure function they may be.

In our restoration process, from day one, all the critical infrastructure functions get the highest priority beyond getting our plants online first.

COMMISSIONER CLARK: I don't -- I don't want to get into a hypothetical, but I'm trying to understand how the facilities are evaluated even by the counties.

Just for example, if you had two hospitals that were served out of two separate substations on two separate feeders, and you had to begin a restoration process, the county would determine which one of those facilities that are -- or your predetermined list, or your agreed to list would

determine which one of those was restored first?

MR. OLNICK: No, the county wouldn't do that. That would really be -- that would really depend on the restoration process itself. We would be looking at both of those at the same time, but --

COMMISSIONER CLARK: But you have limited resources, you are going to have to decide. I guess my question is, would it help -- be helpful for you if the county said, these are the priorities. Here are the restoration priorities, and assuming you had this example, we would rather you put the resources on this facility as opposed to this facility to get this one done. Would that relieve you of any liabilities?

MR. OLNICK: Typically, those discussions take place. So with our representatives at the EOC, once -- once our initial, let's say, patrol and assessment is done of those two hospitals, we will have that discussion with our representative at the EOC with their representative of the EOC, and say, this is the situation. And so that discussion would take place then.

COMMISSIONER CLARK: And by having that representative in the EOC, it makes the communication much easier?

MR. OLNICK: Exactly, because each -- each storm is different. So to say this hospital is more important in this storm, it may not be that way the next storm, so that's why it is key to have those representatives so we can have that discussion.

COMMISSIONER CLARK: Thank you, sir.

COMMISSIONER BROWN: Chairman Graham, followed by Commissioner Fay.

CHAIRMAN GRAHAM: Thank you.

Bryan, I have got a question for you to, I guess, try to understand the tools that you are using.

Earlier, you mentioned -- you were talking about smart meters, and you would have to ping that meter to see if the meter was on. Now, I guess my vision is you can look at a screen of a thousand homes, and you can see over here, 200 of those homes are out. Now, do you actually have to take action to see if those homes are there, or is it automatically on the screen? Do you have to ping each one of those to see if each one of those 200 are out, or can you look at the screen and see those 200 are all out?

MR. OLNICK: You can -- maybe let me answer it

this way.

In a day-to-day scenario, I can ping an individual meter, or I can ping a group of meters, and our line workers and trucks have that capability. They can ping thousands of meters.

Typically, an outage that, on a day-to-day basis they are responding to, that would be the scope of something they would be working on.

In a hurricane, when you have millions of them, that process is not as efficient. So we do two things. We have a group of individuals at our command center that -- that do some of that work for our line crews, because they are more available to do it.

And if I can answer -- if this is, I think, what you are looking for. It's not -- it's dependent, again, on how far along we are in the restoration, because you may try to ping those meters, and some of them may be in and some of them may be out. But if the infrastructure is not robust enough, and has enough systems in place to see everything, you could potentially miss something. And so it kind of depends on the timing of when you do that.

There is no giant screen that we look at and

look at every individual one. But within the laptop device, or the screen that could be at one of our staging sites, they could see a pretty large area and zoom in and out to a community level. But once you get past thousands, it's very hard to distinguish what that little red or green dot is on a map. You end up kind of zooming in.

So it is very helpful to get down to more of a localized level than it is zooming out and looking at the bigger picture.

CHAIRMAN GRAHAM: All right. So maybe I am putting more -- too much of an effort into the word ping. When you are saying you are pinging something. If you just pull up a thousand homes, is that pinging a thousand homes once you pull the screen up, or is it more involved than that?

MR. OLNICK: No, it -- it can. And this is -- this is the challenge during a hurricane event.

On a normal day-to-day, if you call our care center, the representative can ping your meter and literally, within seconds, get a response.

When you have a lot of your system and millions of homes out of power, that can take hours to ping all of those. And so the timing difference, and the expectation is a lot different

on a day-to-day than it is for a storm. It's just -- the system to go through and do a million at a time can take hours. So that's kind of the difference.

CHAIRMAN GRAHAM: So like on a normal outage, do you have to react to somebody calling in, or is there an operator or somebody somewhere that sees the screen and say, okay, we just had a transformer blew out here and 100 homes are out, or -- I mean, is that on the screen somewhere, or is that a phone call that comes in? How do does that -- that person know that there is a problem?

MR. OLNICK: So normally, on a day-to-day like today, probably over 90 percent of the outages through either our SCADA system or our meters telling us that -- that something happened and somebody is out of power, most of the time we do know. During a hurricane, though, that's -- that's different, as the network goes down.

If a customer calls our care center, and that phone number is the phone number they are using on file, it actually -- and they want to talk to a care center rep, it actually pings the meter, gets the status, gets the reading before that customer even gets a chance to talk to the care center rep.

So the care center representative already has that information ahead of time.

So day-to-day, a lot of that is almost done behind the scenes without anybody having to do it. During a storm, because of the complexity of having millions and the timing of it, it goes from seconds to hours because of the volume. The system, to process millions of those, can take hours to do that.

And that's one of the enhancements that we've actually added since Irma, is we relied heavily just on our outage management system to give us an indication of who was in or out. And when one of our line crews was working during the storm, it may have taken them hours -- minutes or hours when they finished to radio in and say I am done.

During -- during day-to-day, that's more automatic. During -- after Irma, what we've done is now we've tried to leverage -- even though it takes hours to ping all of those meters, we are bringing that in with our trouble call system, so in the future, when a customer calls during a hurricane, we are trying to leverage multiple sources of information, even though it could be hours old, to at least give a higher confidence

level of what we've seen in the last couple of hours.

CHAIRMAN GRAHAM: That kind of segues into, if I can, segues into my -- my second question.

As you heard Tom say earlier, and as I am sure you are aware, communication is one of the key things to all of this. And I know we go out and get mutual aid from other utilities. Do we get mutual aid when it comes to customer service as far as somebody answering the phone?

MR. OLNICK: We actually did do this during Irma. It was one of the first times I am aware of in our -- in our company's experience we did something like this.

I won't mention the utility, but they were far on the west coast, and they actually opened up their care center, and we leveraged, I believe, hundreds of their care center reps to answer phones. That now has become more of a standard process for us moving forward.

So during Irma, we do have two care centers in Florida. We have one in Texas. The one in Texas, we put there after '04-'05 hurricane season as a lesson learned. And during Irma, we did actually, through mutual exchange, reach out to other

utilities, and that was one of the first times, to my knowledge, we've done that. And again, that will be more of a standard practice in the future.

CHAIRMAN GRAHAM: Now, will they also have access to your computers as well so they can answer some of these questions?

MR. OLNICK: They will. And that was the uniqueness of certain utilities that have a similar phone answering system that you do. It was -- it was easier for them to be able to do that because their systems and interfaces were very similar to ours. And so we are working with a few other utilities that can do something very similar. I think we've identified a few more.

CHAIRMAN GRAHAM: Thank you.

COMMISSIONER BROWN: Commissioner Fay.

COMMISSIONER FAY: Thank you.

I will be -- piggyback with the rest of the Commission a little bit, in that I -- I see the time that the utility spends to repair lines as being the top priority. And as you address some of those issues, you run into how do you even get access to those lines, and what's an efficient way to do that?

And so my first part of that question is how

do you coordinate with the State, or with your other resources, to make sure your folks are getting to those lines quickly, and their time is spent working on the lines and not addressing blockages?

MR. OLNICK: Again, probably the biggest advocate that we have is our representatives in the EOC, and that would be the State EOC as well as the local EOCs, to be able to be there and available to remove big barriers. Then -- then locally, through either -- if it's beyond just EOCs, our local representatives and customer service representatives can do the same thing.

So our -- our coordination at the state level through -- again, if it's a big issue, we will work through the State EOC. If it's a more localized issue, we can work through the local EOC. If it is a school board issue, we will work through the local school board.

So it's having those relationships and having those contacts. And if it's at a municipal or county level, if it's access to a water plant, or so forth, we work through our EOC representatives and they are very quick in getting whatever contact we need to get in contact with.

Accessing during a storm, it's not as much accessing a locked gate as it is sometimes, because of storm damage, getting access into something because of a tree or something in the way.

COMMISSIONER FAY: Do -- are there certain entities that are more responsive than others, or more consistent? I know you cover a large territory. Do you prioritize who you reach out to to deal with those issues?

MR. OLNICK: I wouldn't say we prioritize as much as we -- we use every contact we have through, whether it's the EOC, or our representatives that have a relationship with whatever business it is, or school board, or whatever it is.

I wouldn't -- again, I would say that -- that having representatives in the EOCs, state and local, are probably the biggest advantage to being able to do that.

COMMISSIONER FAY: Great.

And then the other part of the question is -- I might be disclosing my nerdiness a little bit here, but I noticed the use of drones to at least get some visuals on some of these issues. Can you talk a little bit about the benefits and the changes that you have made to use those

advancements; and then, you know, what is working, and what you -- what you intend to expand on?

MR. OLNICK: So during Hurricane Irma, we utilized 29 staging sites. Each one of our staging sites had two drone teams assigned to them. In Irma, we flew over 1,130 something drone flights. We got waivers from the FAA to fly several out of line of sight just because the areas were so flooded that it was very hard to get into and access.

So to have -- to have -- you know, one of my key things I always tell my incident commanders is I don't want any surprises. And so you can be working for days, and then all of a sudden you get back in an area that was covered with trees and find out there is a lot there that you weren't able to see because you couldn't access it.

And so they have given us a tremendous amount of ability to get visual line of sight of damage. We've also learned how to use them in some very unique ways as a delivery method to carry a piece of -- a device, a rope strung to a wire so it can fly the rope across a channel with the wire attached so we can then pull the wire across the channel.

We have found all kinds of ways during -- I think during Irma, this was probably the most drone missions that any utility has flown in an event. And so it was a real -- real good testimony of the different ways that you can use them.

Safety was mentioned earlier. You know, in a very complex restoration effort, it's great to have one above to watch what's going on so that, you know, you get a different perspective on the work, and so forth.

So the ability to actually -- again, I don't like surprise, so the ability to try to get ahead of what kind of damage is in flooded areas and heavily treed areas, and areas that you just can't access safely, for whatever reason, was -- was -- saved a significant amount of time in some of these.

COMMISSIONER FAY: Yeah. So I think the safety issue alone is reason to use this new technology. And I think it sounds like you guys did a great job using it.

Are there any barriers to the use of these, or is there anything on a federal or local level that is an issue?

MR. OLNICK: There is. You know, there are

certain restrictions on a federal level that we have all been working cooperatively with certain agencies at the federal level to try to be able to remove some of these restrictions. And we've been making a lot of progress, and hopefully we will continue to make some progress. They were very helpful in giving us some waivers to be able to fly further.

The biggest restriction right now is you have to have visible line of sight and control. When you may have a line that goes for miles, and you would like to fly that drone farther than you can see it, and that's beyond line of sight. And so we -- they did give us many waivers during Irma that allowed us to do that. And -- and that is probably one of the -- the bigger areas that we will continue to work with a lot of those agencies on, but we are continuing to make a lot of progress; but any help you can give us on that one, we will take.

COMMISSIONER FAY: Great. Thank you.

Thank you, Chair.

COMMISSIONER BROWN: Commissioner Clark, followed by Commissioner Polmann.

COMMISSIONER CLARK: Just a follow-up on

Chairman Graham's questions regarding the ability to ping meters. I had similar experience with the power line carrier system, the communication level between the command center and the substations.

Is that where your issue is, is the link -- is your data link between the substations, it's limiting your ability to ping multiple meters, or is an actual power line carrier -- is it actually the meters that you are using and the speed at which they transmit?

MR. OLNICK: It's not the power line carrier. It is, I will say, really, kind of two things.

The way -- the way this system works, the way a lot of these technologies work, they bounce off of each other to get a message home. And during a normal day-to-day basis, when you have millions of them out there, that works very effectively. When you have large-scale outages, sometimes the way they normally find a way home, which could be several bounces, those bounces don't exist. And so it's trying to find other ways home, because that's the natural technology that's built into it.

So normal day-to-day, what can take typically seconds to find ways home, can literally take hours when millions of them are trying to find a new way

home, and it's really more of that's --

COMMISSIONER CLARK: It's not a capacity issue.

MR. OLNICK: It's not really a capacity issue, no.

COMMISSIONER CLARK: Okay. Thank you.

COMMISSIONER BROWN: Thank you.

Commissioner Polmann.

COMMISSIONER POLMANN: Thank you, Madam Chairman.

The Chairman mentioned at the opening comments about exercises that are ongoing, and a question I have there, from your experience, from the utility's experience, I know you conduct these. Would it be more helpful with regard to your restoration efforts if the utilities were to have these types of exercises more frequently, or to involve additional parties and have more detailed exercises? Because I see those from my own prior experience as kind of a continuous learning process where you learn adaptive management for an actual storm.

So would more frequent, or more detailed with additional parties, you think, be more helpful?

MR. OLNICK: So the first one, I would say

more frequently. When you look at the storm dry run, it serves several functions.

We begin our normal storm training of all of our employees, think of it -- the analogy I like to use, it's kind of like the National Guard Reserve. Just about every one of our employees, no matter what their normal job is, during a storm, they have another job. And so we begin that process usually in January, through about now.

So training has gone on for about the last six months, and it kind of culminates in a real live, kind of lifetime live fire exercise, which happens this week, which we will set up mock staging sites, mock drills. It's only one of several dry runs that we do every year. We also conduct other dry runs for cyber attack, and other things.

So our -- our emergency preparedness organization is a year-round organization, and we do reach out and have representatives from either the Commission here, and the staff, on occasion. We will have representatives from FEMA, the Department of Energy, from other utilities.

And so it is -- we do take that advantage and that opportunity to bring in outsiders, Department of Energy, to make observations, and then ask them

to actually participate during the roundtable exercises with us, and give us that input that they may have seen or experienced in other areas.

I would share, too, that although we -- we do have our dry run, and we hope we don't have to exercise our storm organization this year, we do get a lot of practice.

This year, for example, from January 5th, I think, until April 6th, we've had incident commanders, management teams and line personnel in Puerto Rico for over 90 months -- or 90 days getting experience. Shortly after Irma, we sent crews up to Maine. You know, we get a lot of experience from mutual aid all over the country throughout the year.

So the dry run is very important for us. It helps us coordinate -- we typically try do it with a state dry run. We work with the EOCs. So I am pretty comfortable in doing one dry run every year, but I do want to make sure that you are comfortable.

We have a lot of input and a lot of guess, and we do take recommendations in that.

COMMISSIONER BROWN: I just have a few questions to follow up from my fellow

Commissioners. And I do want to bless Commissioner Clark's comments on the safety. I think drones have absolutely been helpful in that regard too, and not just damage assessment, but there is a lot of different safety measures that have been beneficial to all the folks that were involved in the restoration.

From my perspective after witnessing the storm firsthand on the ground, and in the area, I see vegetation management really as the biggest issue. And you mentioned it, about the Right Tree, Right Place program. You also mentioned a pole inspection program, though, for non-electric utilities that own poles with the electric facilities attached.

I want to -- if you could talk a little bit more about the Right Tree, Right Place. It makes sense. It definitely makes sense during exigent purposes during -- after a storm, but I imagine the cities and the counties will -- or whoever owns that -- that -- the land there, will oppose it.

MR. OLNICK: There are several that oppose it quite a bit, and have their own philosophy on what they think is a right tree in a right place, and a right species, and are actually planting trees

right back under our line as we speak.

But we do have several county and local governments that just, over the last year, have actually been very cooperative in putting recommendations for some more stringent local regulations to ensure that homeowners, builders, developers do plant the right tree far enough from the line, the right type of tree, the right species of tree, and are actually proposing some enforcement actions to comply with that.

And so I give them a lot of credit, because they do see the result of having lines cleared of vegetation during a major hurricane event, and how much quicker their community gets restored. And the opposite, which we've experienced here last year, can take place when you do plant trees too crowded, where their roots can't take -- root properly, and the wrong species of trees that inevitably, in a major storm, will not stay standing.

COMMISSIONER BROWN: I appreciate that discussion. And I am interested -- I am definitely interested in exploring that idea a little bit.

The pole inspection program that you suggest for the non-electric utilities, so say you have got

AT&T owns a pole, which -- and who, you know, really has the authority to tell them that they need to harden the pole? Because it's not this Commission right now.

So how would you suggest requiring a type of pole inspection program? How do you see that developing, especially for these non-electric utilities that, really, the FCC maybe governs?

MR. OLNICK: Well, that's -- that's why I put it on my list, because I think that somehow that discussion needs to take place, and I think it needs to take place between us. I think between you, and maybe with the FCC, whoever it is.

But we need to figure out a way do that, because it is a weak link for us, for other utilities in this room, and specifically here, more so, I think, in the state of Florida, maybe than other areas. And I think it will continue to be. And, you know, this is -- this is one area that, you know, more than one will continue to work with you on trying to find a solution for this.

I don't have the answer on who is the right body or authority to do that, but I think we need to figure that out.

COMMISSIONER BROWN: Do you think these

telecom companies, do you think they have an appetite to harden -- are they hardening? Do you know?

MR. OLNICK: Not a big appetite.

COMMISSIONER BROWN: Not a big appetite.

MR. OLNICK: I will leave it there.

COMMISSIONER BROWN: So I -- I hear Commissioner Clark.

Commissioner Clark, you want to jump in?

COMMISSIONER CLARK: Yeah, I did.

So just as a -- just a reminder, or a question, your joint use pole agreement, attachment agreements with the other utility companies, just a reminder, you are paying them a yearly fee to be attached to that pole; is that correct?

COMMISSIONER BROWN: Yes.

COMMISSIONER CLARK: And is that -- I assume that is negotiated by the utility, the two utility companies.

MR. OLNICK: I will have to confirm how we negotiate that. I am not sure if you have input on that, or if that's totally negotiated with us.

COMMISSIONER CLARK: I wasn't either. That's kind of why I was asking.

MR. OLNICK: You may have input on that.

COMMISSIONER BROWN: I will just look, does staff have anything that they would like to offer to Commissioner Clark's question? No?

COMMISSIONER CLARK: Okay. Thanks.

COMMISSIONER BROWN: Okay. Any -- yes, Commissioner Fay.

COMMISSIONER FAY: Just one more follow-up.

Can you talk a little -- I know you touched on it, but talk a little about the progress of the underground pilot?

COMMISSIONER BROWN: You just stole my question.

MR. OLNICK: Sure. We have -- we have a lot of interest in that.

I believe it was maybe a year or two ago when -- when we, I think during one of our last cases, we shared that it's been a great vision to harden our feeder system, but the next step would probably be to start hardening laterals. And we had a thought of what that looked like, and we thought that looked very similar to harden overhead laterals just like we harden overhead feeders with stronger, harder poles. But after Hurricane Matthew and Irma, it really shined a light on, especially in rear easements with lots of trees, a

taller concrete -- whatever it is, the tree is still going to come down.

And the performance of our undergrounding during those storms really showed that it probably could make more sense to underground a lot of those laterals and rear easements than harden them overhead.

And so what we are proposing over the next several years is to do several hundred miles of laterals in rear easements and try to test different construction methods, different -- different impediments that we may see in undergrounding than we see today.

And the reason it's different is our undergrounding today has grown, and I think mentioned earlier, mostly from new construction over the years. Everything -- a large percentage of new subdivisions, new developments are all new construction. Greenfield undergrounding has its own design and own issues, and when customers want to underground, they come to us.

This is a different situation, where we are going to have to go to customers and say we want to underground, will you let us underground? Can we go this route? Can we do this? And there are

different construction techniques that we may be able to try to be able to do that.

So there is a whole new host of things now that, you know, one could argue we do a lot of undergrounding, and we do, but now it's a different approach.

But we are real excited because we think the long-term plan -- and this, frankly, would probably be decades away, but just like we had to make a decision on hardening in the 2004, 2005 season, we have got to make a discission on this. This could eliminate potentially a lot of the issues that you may see with vegetation issues and rear-of easements in the future some day.

So we are trying to engineer that out. You know, there is one way you can do it, but you are still always going to be back trimming that tree. So we are trying to figure out a way to engineer this out once and for all.

COMMISSIONER FAY: I have one follow-up.

COMMISSIONER BROWN: Sure, go ahead.

COMMISSIONER FAY: So, and I -- when I looked at the program initially, it seemed like a great idea, and it seems like you are going to progress through it. The more staff is educating me, and

the more I learn about it, this change comes with its own set of problems.

And so I know when we speak to undergrounding areas that are not new development, there is issues with roots, and water, and all these other potential problems. Is that sort of why this is -- this pilot is out there, so you will have time to implement and then see what some of those issues may be before investing.

And I -- you know, I think of, literally, you know, you drive down your street and you see the whole area is torn up to underground, that it's not a easy process. And so is that -- is the pilot intended to give you efficiencies and improvements before you implement anything on a bigger scale?

MR. OLNICK: It is. So from an efficiency and improvement standpoint, obviously, one of the goals here is to try to get it to be the most cost-effective as we can, but to look at different engineering and construction techniques, whether they are directional boring, whether they are using a different design of the number of transformers we may use traditionally, versus do we do something different?

So we are going to try to figure out the most

efficient and cost-effective acceptable to customers, all of those kinds of things. I mean, it may sound easy, but there is a lot of pieces there we are going to have to figure out, and this will be hundreds of laterals that we end up doing over the next couple of years.

We are going to do them all over the state, because customers are different everywhere, and the challenges of soil conditions on the west coast are different than they are on the east coast. So we are going to try to figure all of that out and then come to you with what we think a good recommendation would be long-term.

COMMISSIONER BROWN: So just a quick little follow-up to Commissioner Fay's question.

So it -- are you saying that -- are you looking that undergrounding is the elixir for all of the problems?

MR. OLNICK: No. I wish it was the magic elixir, but I think, just as today in feeder hardening, undergrounding makes sense in certain places.

Part of this pilot is to see how far do you go? Which -- which lines in rear-of easements and laterals? Which ones do make sense to underground?

It may not be all. I would be very surprised if it's all.

But I think that there is probably a good percentage of them when we are all said and done, once we've engineered, and studied, and come with a recommendation, there will be a percentage that says, if it meets this criteria, and it's this -- this, that's probably a better recommendation than just going back and hardening it overhead.

COMMISSIONER BROWN: Thank you.

And then for the other utilities that are here that are going to be presenting, please listen to these comments and questions from the Commissioners, and feel free to respond as your own company sees fit, because this is definitely an interest for all of us here.

I have to touch on lastly, though, the communication. I think Florida Power & Light, as do all of the IOUs, really strives and does an excellent job at keeping the Commission informed at the state EOC before, during and after a storm. So I commend you all for you -- and I know it's changing, and you are developing, and you are learning, and you are trying to grow with the technology. And I think you all are doing a -- are

trying to achieve a good job to have that customer satisfaction.

But, you know, looking at the 700 customer comments, and they came in to all of our offices, and communication ultimately is an issue that customers -- and, you know, whether it's communicating about restoration times, and it's so hard.

But looking at what Florida Power & Light is doing on the digital side, creating an FPL mobile app, I am curious about that, because can that work even if power, say, in a home is out, if you have cellular data with a network, would that be an accurate way to track? Because these customers want -- I mean, they want to know when they can come back to their homes. They want to know when the power is going to be on. I mean, it's not necessarily -- from looking at the comments in this docket, it's not necessarily that, oh, you know, it's two days they are going to be without because they planned for two days. It's they want that accurate information, you know, if you can elaborate a little bit on that.

MR. OLNICK: I can.

Customers love digital access. We learned in

Irma, given the millions of hits we had on our system, that customers must have three devices in their hand at one time, because just the millions --

COMMISSIONER BROWN: My son does.

MR. OLNICK: -- the millions of hits you are getting were more than four-and-a-half million, almost five million customers. So you get just multiple things at one time.

And prior to Irma, we had -- we did just introduce a new mobile app. The mobile app works great in its design on a day-to-day basis. During Irma, the way we engineered the mobile app, had a lot of information that, during the storm, customers really didn't care about. And so that was a big lesson learned for us.

How do we trim that down during a storm so that -- alls they really want to know is give me my if I am going to be in or out. I don't want to know what my next month bill is. I don't want all of this. And so that was part of the slowdown, frankly, in our system, was we were using a system designed more for day-to-day that we had just launched.

But we do know that customers, whether they've

evacuated, they want the best information they can. So our goal over the last six or seven months since Irma is to try to bring in even more information into those mobile apps in a digital platform, so that it's looking at multiple different pieces to give you a different message that may say, we've looked at this, this, this, and this, and right now, the highest probability is we can tell you this. We are going to be pinging them all in another couple of hours, so if you want a confirmation, you might be able to check back.

So we are trying to give them a better sense of what that is on a -- on kind of a thinner application during a hurricane because they don't want to know all this other stuff. So we are working through that.

On a day-to-day basis, it works very efficient in being able to give you times, and so forth. So we are learning how to leverage what our restoration process is during a storm, which is different than day-to-day, and now design that app a little bit differently to meet their needs.

COMMISSIONER BROWN: And that's great, but the app could work, even if you don't have wifi, you don't have electricity to your house, it could

still be -- they could still utilize it, you know, say they are at hotel, and the network is working, they could --

MR. OLNICK: Right.

COMMISSIONER BROWN: -- see, oh, I can go back to my home now --

MR. OLNICK: That's what --

COMMISSIONER BROWN: -- ostensibly?

MR. OLNICK: Yep, that is the goal. So even though -- even though the meter -- the house may even have power, we may not have full connectivity to see that sometimes, because it's trying to find a way home and it hasn't found a way home yet, but it may be back in power.

So we are trying to give them all the latest information that we can every several hours by kind of routinely looking at things to do that.

So the system, our -- our mobile app system was up and running the entire time, except frankly for about 10 minutes when we had to take it down for about 10 minutes to reboot something, but it was up and running, but it was not providing the most accurate information sometimes, and that's what we really focused on now.

COMMISSIONER BROWN: Thank you.

Commissioners, any other last questions before we move from Florida Power & Light? All right.

MR. OLNICK: Thank you.

COMMISSIONER BROWN: Thank you.

We are -- our next speaker is Jason Cutliffe from Duke Energy Florida.

MR. CUTLIFFE: Good morning, Commissioners. I believe you have the presentation we prepared, so I appreciate the opportunity to share some additional opening comments to go along with it.

As has been mentioned, Hurricane Irma was a historic storm in terms of both magnitude and scope. Many of the employees and utility partners that came to work for Duke Energy worked incredibly long hours, and many of them were personally affected by Irma's damage as well. I am so proud of our people and the effort they put forward, the incredibly long hours to restore service safely to over 1.3 million homes and businesses, including a million in the first three days.

And as we evaluate the devastating effects of Hurricane Irma, and the threat of more extreme storms in the future, we are determined to get better. We have been listening to our customers' concerns, and have undertaken a thorough review of

all of our storm processes.

Our goal is simple, to become better and far more effective in how we respond to these storms, and how we communicate with our customers.

To improve the information flow to customers, in 2018 we are rolling out an expanded social media presence, and a doubling of the customers now to over a million that are capable of receiving outage updates directly by either text messaging or e-mail. And we are working closely with local government leaders and our EOC partners to identify their critical restoration priorities on the local level. There is more we can do in partnership with these governments, and -- these government agencies, and I look forward to the discussion that will follow.

We know the next destructive hurricane is not a matter of if, but when. And our customers know this, too. They know it's a fact of life living in the state of Florida.

Since 2004, Duke Energy has invested over $2 billion in our hardening programs. There aren't any quick fixes. To change the characteristics of an electric grid takes a significant amount of time, and that's why we are excited about the

agreement approved by this Commission last year that continues construction on a smarter, a more resilient grid. It will be a grid with improved reliability, that's more receptive to solar and renewable energy sources, and with infrastructure to combat the growing cybersecurity threat.

We are working toward a grid that uses automation to identify faults, other disruptions, and to automatically reroute power to minimize the impact of those faults. And the agreement enables a plan that has been validated by our hurricane forensics reviews from Irma and Matthew, and other storms, and many years of operational experience with the facilities that have been upgraded.

An example of this is without delaying Irma restoration, we collected site forensic information on over 500 poles in hardened line segments. The data was reviewed by an outside consultant, and the results from that review have helped shape our plan to, among other things, build more resilient transformers, increase the strength and capacity of hundreds of more line miles, and use data analytics to target undergrounding of the poorest performing overhead segments. Doing the right work today will better protect the energy grid for years to come.

So our customers expect and deserve power that stays on, and if there is an outage, power that comes back faster than before. By making these targeted investments that build a stronger, more intelligent, more resilient grid, installing meters that provide customers with the information and options they deserve, and investing in the targeted undergrounding, we are moving to a smarter energy future for all of our customers.

So again, thank you for the invitation to be here with you today, and I look forward to the discussion that will follow.

COMMISSIONER BROWN: Thank you, Mr. Cutliffe.

Commissioners, any question of Duke Energy? Yes, Commissioner Fay.

COMMISSIONER FAY: I just is have a quick question on your initial comments. I always find it extremely impressive that during a time when everyone is looking to you to respond to a storm, you have your own employees that are dealing with the same issues that your consumers are dealing with. And so how do you plan to ensure that you can provide a proper response knowing that some of those individuals might not be able to get to the facility that they need to, or may need to be home

for other reasons?

MR. CUTLIFFE: Yeah, I would have to start by commending just the will and the sense of purpose in mission that our folks have; because they have many reasons not to come to work, and nearly all of them do, even they when they've got homes at home that are dark, and food that's going bad, and the same things our customers are working through.

But the way we deal with that operationally is in our incident command structure. It's a very layered, scalable operational plan. So we've got the means to, if a -- if a -- if an employee is not able to come to work for, you know, legitimate issues with their family, or at home, we've got folks trained that can step in and fill that role. We've got a process to call up other employees who have had off-season training that can fill those roles as well. So we have a means to fill the storm role if somebody is not available to come in.

COMMISSIONER FAY: And you implement those plans, I mean, they are -- you see that actually come to fruition when a storm hits?

MR. CUTLIFFE: Yes. Yes. And, you know, there are also -- there are other ways to contribute if not the normal 16-, 18-hour days that

would be worked, there are accommodations made to work part days for a period of time, while, you know, roofs are covered and that kind of thing.

COMMISSIONER FAY: Great. Thank you.

Thank you.

COMMISSIONER BROWN: Yes, Commissioner Clark.

COMMISSIONER CLARK: Yes, Mr. Cutliffe, a couple follow on to my earlier question. You get your two wishes, what would those two wishes be?

MR. CUTLIFFE: Can I keep the two that my colleague --

COMMISSIONER CLARK: And add two on to it, that would be fine.

MR. CUTLIFFE: I like them both.

I would add to those, engagement with local governments in education and striking the right balance in tree trimming. We have folks that do that every day. We have vegetation management specialists that work with city arborists and directors of utilities, and there is a balance to be struck between legitimate aesthetic concerns and our obligation to clear the lines, so that would be one.

The second would be -- I will characterize it this way: Our folks are very good at restoring

service in a hurricane. That's what they do. Our employees that do that work themselves typically transition into a role in a hurricane where they are coordinating and overseeing the work of dozens of others. So they know what they are doing, and they are very good. I want to keep them on that mission, and so anything that distracts them from working their plan lengthens the overall restoration process.

And one example that's already been discussed that's a very good one is the critical facility priorities. There is a -- there is a legitimate place for that in our plan. We want that, because we can't foresee every circumstance, and so we -- we -- we appreciate the partnership with our EOCs to identify and act on those -- those critical situations.

In fact, in Irma, we call these EOC missions, and it's when we pull our crews off of their planned work and we send them to a location that's a high priority.

We worked over -- we log every one of those so we know that they are completed. We worked over 4,500 of those missions in Irma. But they take us away from the planned work. So anything you can do

to help us distill those lists down to the critical priorities, and make sure that when we pull our crews off, it's only for an urgent matter.

We are happy to do it, but when we get pulled off to restore what turns out to be a school ball field instead of a school building, it delays restoration.

COMMISSIONER CLARK: To follow on to that, one of the -- some of the activities that your staff has to be involved in on a day-to-day basis during a storm, as you talked about the roles changing, one of the issues, I think, that's been brought up and probably discussed is hotel rooms, the ability to find available hotel rooms. It's not just hotel rooms.

One of my responsibilities was booking and lodging and food preparation during storms, and having to make that call when the storm is still 200 miles out in the Gulf, and you are going to decide to book 300 hotel rooms or not, somebody is going to have to pay for them if the storm takes a turn, and I have made that bad call a couple of times myself.

Is there anything that we can do from the State's perspective to establish priority for

utility restoration employees to be able to get hotel rooms, and even to possibly work with -- with our hoteliers regarding the cost of booking those rooms, or at least locking those rooms down in advance. And as I also understood, you also had some employees that were kicked out of hotel rooms during this time period that caused a problem.

Is there anything that you know of that we could do to help in that process? And feel free to tag on even food preparation, tent cities, a state contract for these type of services; is that something we should be looking at?

MR. CUTLIFFE: So I would offer a couple of thoughts in that area.

In regard to the lodging, there are -- we work through a third party vendor that secures hotel rooms for us. They are very -- it's what they do. This is their, you know, their mission, so they are very good at it. They work out rates ahead of time with hotels.

So education, along the similar lines with local governments and tree clearing that, once we are in, we need to stay there until restoration is complete. And that's what you mentioned, Commissioner, with there were some relocations that

took place.

I don't know -- I am not sure the reasons of each of those situations, but it's disruptive to our -- again, our folks getting lights on. We need to keep them where the work is, and when they have to relocate, it delays restoration.

So continuing, or honoring those arrangements, and allowing the restoration, the first responders to stay until their work is done would be one area.

The second would be alternate housing -- we call it alternate housing. It's something that has become a foundation of our logistics plan. The Governor challenged us a few years ago to expand in that area so as to allow more evacuees and other uses of the hotel rooms, and we've done that. I know all the utilities have done that.

We had, at one point, over 6,200 alternate housing beds that we were using in Irma. And those are anything from cots in a gymnasium, to sleeping in a tent on a staging site, to sleeper trailers.

So we have greatly expanded our capability in that area, but what we do run into -- we saw this in Irma -- the vendors that we rely on had a lot of their equipment in Texas for Hurricane Harvey, and so cooperation with other states to help with an

apportionment of those resources would be a benefit to all of us.

COMMISSIONER CLARK: Okay. I want to go back and follow up on the tree trimming issue as well with -- with --

In regards to the underground performance, I think we all understand that underground has a place. It is not -- it is not the overall solution to the problem.

We've established right-of-way parameters for laterals and feeder lines, three phase, single phase. Would looking at expanding the lateral right-of-way requirements to something more similar to what we have on the feeder lines be a potential solution as well?

MR. CUTLIFFE: It could be part of a solution. The -- that brings us into property rights with individual landowners, of course.

One of the other unique aspects of the laterals is overhang. So overhanging trees that are outside of the easement boundaries. So we trim to what we've got. What would help is expanded flexibility to remove trees from outside the right-of-way.

And you mentioned it, Commissioner. I think

it's really -- it's an all-of-the-above solution. That certainly is part of it.

Also, quite honestly, moving those facilities out of that environment is part of the solution as well. And the undergrounding program I mentioned that we are moving into is aiming to do just that.

COMMISSIONER CLARK: Could we look at some sort of pilot that expanded -- I know we talked about the pilots for the underground, and looking at their performance, but should we look at a pilot with expanded right-of-way on laterals that compared itself to underground performance?

MR. CUTLIFFE: That's something we would be happy to discuss further, yes.

COMMISSIONER CLARK: Okay. Thanks.

COMMISSIONER BROWN: Commissioner Polmann.

COMMISSIONER POLMANN: Thank you, Madam Chairman.

A question regarding your experience with the mutual aid, and it's concerning changes on how you employed that, took advantage of it.

Compared -- say, compared to prior storms, what changed in the experience with Irma, and either in terms of the magnitude of your mutual aid or the efficiency? You know, did it perform? Did

your interaction with crews from other locations, did that work better in some regard?

MR. CUTLIFFE: The scale of the -- of the support that came to Florida for Duke Energy was, as I mentioned, it was bigger than any storm we have had before. So we had over 7,500 line technicians, just the folks who, you know, work on their tools and do the work, which was -- which was close to double, the largest workforce we had put to work before.

What I observed in Irma in the mutual assistance -- I will call it that, just the process; because it's really -- it's a coordination of mutual assistance groups. We have one in the Southeast. There is one in the Mid-Atlantic. There is one in the Northeast.

What I observed is excellent and improved coordination between those mutual assistance organizations. We -- we shared our needs based on our forecasting models, as other utilities did, and we came as close to make -- receiving those resources in Irma as we have for any other storm, even with the, you know, the greater scale and the larger need.

I would characterize that as a process that

works very well, and I would expect that to continue.

COMMISSIONER POLMANN: Okay. Well, thank you.

We've already talked a little bit here about communication during the storm, and there is many aspects to that. With -- with the mutual assistance, and I -- and you have touched on this, so what is it that you would offer as an aspect of improvement?

Because of the magnitude of the most recent storm, I imagine it was quite a challenge, but from that experience going forward, can you suggest how it, again, might be improved, and at different levels? You have got interaction and communication between the -- your crews, the mutual assistance crews, and then there is the communication from internal leadership to the crews in terms of how are you managing the work assignments and so forth.

And then the one that we've heard a lot about is communication from the utility to the customers. And I won't go into the details of your local experience, but, you know, forecasting restoration times, and so forth.

So how do -- what did you learn about the communication in any of those aspects, and what can

we look forward to in changing or improving?

MR. CUTLIFFE: So I will start with -- with the mutual assistance resources and lessons as it relates to bringing them on system and putting them to work.

The logistics of transportation, we learned some things in Irma with evacuee traffic. At one point there was a concern that I-75 would have to be closed for a river crusting north of Gainesville, and we were looking at a detour plan that was going to add 10 hours to travel for crews coming in from out of state.

So an area that we are focusing on is contingency plans, and working with agencies to minimize the impact of that sort of disruption; because Florida is a peninsula and everybody has to come down one of three highways to get here.

Once on property, our incident command structure that is scalable, and as I mentioned, it places our employees who typically do restoration work in a field coordination role over anywhere from 30 to 50 outside resources.

The communication process is very close to the one that we use every day for normal storms. So that is something that we drill, and that we get a

lot of practice in summer storms. We get practice when our crews go out of town and support other major storms. So that worked -- that worked very well in Irma.

One thing that did not work well is our communication out to customers. And that is something that's been a top priority for us as soon as the storm was cleared up.

We rely on an outage management system to communicate granular level outage data to customers, and that system malfunctioned during Irma.

COMMISSIONER BROWN: That's an outside system -- I am sorry, Commissioner Polmann, but that's a third party vendor?

MR. CUTLIFFE: Yes. Yes. It's provided by a third party vendor. We partner to maintain the system. It's really -- to achieve the function, it's a number of systems that interconnect and communicate with each other.

We set and achieved nearly all of our ETRs, including some in Central Florida, where the greatest damage was. Unfortunately, we set a few that were aggressive and we did not meet them. The impact to customers was exacerbated by our

inability to communicate with them at this granular outage level.

Restoration went on as planned, and as drilled, and as is normally done; but what we realized is our inability to reach out to those customers where they could call in and get specific information about the device that serves them, and their ability to use our iFactor external website map, which is fed by the OMS system. When that was down, it just -- it just exacerbated the situation.

So we've gone about two corrective actions. The first one is we've isolated what the problem was with the OMS system. There was a latescence bug in the vendor software. It's the same system we used for Matthew and Hermine and other hurricanes, but when it hit with Irma volume, the malfunction was evident. That's been isolated. It's been fixed and it's been tested, and we are continuing to test to prepare for 2018.

With our ETR process, we were -- in all transparency, we were aggressive in some of the intermediate ETRs that we set. We learned from that. We have adjusted our process, our forecasting tools, and we are determined to get better in that area. And I commit to you,

Commissioners, that in the next storm, we will be ready, and those lessons will be part of our forecasting methodology when we set ETRs.

COMMISSIONER POLMANN: I appreciate that very much. That's great news.

One other thing, there's been discussion here today about vegetation management, and I fully appreciate the challenges there at the local level with right-of-way and trees that you have control of and you don't.

In my particular area, there are locations where there is a lot of vegetation, and customers they are not shy about suggesting that the utility has not properly managed the vegetation, and I have a strong suspicion that you probably are managing the vegetation that you have control of.

What can we do collectively to make it more clear that there are things that you just don't have control of? We've already talked about it here, but what is the communication to the public, for one thing? Not that that solves the problem, they are just not happy and they don't understand it.

I mean, not that I -- I am not trying to put you on the spot, but what is the collective effort

that you can think about, other than something needs to be done to actually fix the vegetation problem. It's a communication issue.

I mean, where I live, that was just the main thing. They were just, like, the utility is not doing the job to clear the vegetation, and you can't. You don't have control of it.

So I am just raising the issue. How do you tell people that we can't fix it?

MR. CUTLIFFE: I think we just need to continue our education efforts. We need to be excellent operationally to minimize the impact.

And what I would share is, so, you know, we have crews trimming lines every day. Right now, we have vegetation management crews in the air, clearing, you know, clearing limbs from our lines. When we carry that work out, we understand and you have -- you have zeroed in on the crux of the issue in a lot of cases.

We send letters one to two weeks to customers before we show up on their street to cut trees. When our crews arrive, we walk door to door and speak to people and say, this is why we are here. This is what we need to do. If they are not home, we leave door hangers with a phone number and an

explanation.

I think that type of grassroots, on-the-ground, face-to-face, person-to-person interaction is the way you make this better over time, complimented by working with local government officials on the importance, and really not the preference, but the obligation that we have to clear the lines in a storm.

And when it comes to trees outside the right-of-way, that's an area that we can all work on together. Our -- our forensics tells us that 70 percent of the poles that broke were due to a direct impact from a tree, and most of those were from outside the right-of-way. So we know that's a cause, and that's an area for us to continue to work on to get better.

COMMISSIONER POLMANN: I will give you a contrasting example. I live in an area that has underground power, and the county is not shy about clearing trees on behalf of the Fire Department. I came home one day and looked at on my street, which has a very nice canopy, and thought, what in the world happened? They had come through and cut more trees than you could imagine that were hanging over.

COMMISSIONER BROWN: And you got mad.

COMMISSIONER POLMANN: And I -- I -- I had to call them, it's like, well, they need access for the firetrucks. I was like, what in the world happened here?

So I mean, there are -- there are, you know, entities, utility systems and, you know, emergency response folks, it's like we need to get through here, cut those trees. I am not suggesting you do that, by the way.

Thank you, Madam Chairman.

COMMISSIONER BROWN: Commissioner Fay, and then Commissioner Clark.

COMMISSIONER FAY: Thank you, Madam Chair.

My question is on -- when I went through your presentation, you spoke a little bit about the waivers for reconnection fees and delays. Can you -- it wasn't something that I -- from a consumer perspective that I thought of initially, and then realized what a significant issue it probably is to manage that and communicate properly to those consumers how that's done.

So can you talk a little bit about the decision to do that, and then the process for those consumers?

MR. CUTLIFFE: Yes. We recognize that for many of our customers, long after the hurricane, their lives were disrupted, and so I just -- this is at a high level, a few of the options that were put in place for them. For those that were relocated, when they called us and they were moving their service to a new location, an apartment or a rental property, we -- we asked them if it was hurricane related. Most of the calls we got after the second week of September were. And if it was, we waived any of the normal fees that go along with stopping service and starting service.

For those that received estimated bills, that's another irritant for customers after a hurricane, because we are not able to read meters during that period. We've got a plan to install AMI to alleviate a lot of that problem, but until we do, a lot of customers got bills that were higher than normal due to the estimation.

Plus, for many of them, they couldn't work. If they had small businesses, they weren't getting revenue. If they had to go to work and they were taking care of a damaged home, they, you know, they -- they weren't pulling a paycheck.

So where they had back bills, they were given

interest free period of time to make payments over either three or four months to ease some of that burden until life got a bit back to normal.

COMMISSIONER FAY: Was there anything that you feel that maybe was a burden to those folks that you didn't originally think of?

MR. CUTLIFFE: I think our role was really to help with their utility payment. They had a lot going on in their own lives with what they were dealing with. So for us being able to waive those fees, and give them some payment terms that were, you know, more -- more flexible for them, that was the important thing.

COMMISSIONER FAY: Okay. Thank you.

COMMISSIONER BROWN: Thanks.

Commissioner Clark.

COMMISSIONER CLARK: I am going to opine for just a moment on right-of-way, and staff is probably going to start cringing any minute. But I am an advocate for right-of-way trimming. And you -- we've talked about overhang. We've talked about the issues.

I am an advocate for ground-to-sky clearing. I don't think we ought to be exposing ourselves to these kind of problems.

I am also an advocate that this Commission -- I am hoping this Commission will take a position at the end of these hearings that advocates, whether it be through our own policies or through advocating to the Legislature, some change in the laws so that -- so that right-of-way can't be -- right-of-way trimming can't be preempted by local ordinances. I see that as a problem.

You are dealing with 20 different municipalities that have 20 different sets of rules. And one of the biggest problems we have is that in your -- your willingness to cooperate and try to get along and work with the consumers, as opposed to saying, no, this is for the benefit of everybody that is on this line. We are going to clear this.

I follow that up with the question regarding would enhanced sectionalizing give us some advantages in terms of isolating these problems and focusing on efforts where we are able to keep things trimmed?

MR. CUTLIFFE: Yes. And -- and I would respond to that by sharing some of the efforts underway -- and this goes back to the all-of-the-above approach.

So sectionalizing is a big part of it. We've got a program that's underway where we are installing automated equipment on our -- on our backbones, and we are segmenting the feeders into smaller and smaller pieces, which is a big part of the -- the automation that we call the self optimizing grid.

And so if there is a fault, if a piece of a tree does break out in an overhang, in the past we've had anywhere from 1,000 to 2,000 customers per segment. We are building a plan where 80 percent of our customers will be on a feeder that has those segments broken down to no more than 400 customers. So it -- it -- it sectionalizes, as you described, down to smaller pieces.

We are also installing stronger, higher capacity conductors, which can withstand brush contact and won't be taken to the ground like some of the annealed wire that's there might otherwise do.

And then in those cases where the environment is just incompatible with our tree trimming standards due to trees, weak trees, poor root systems, rotting trees outside the right-of-way, established overhangs that are, you know, 100 feet

high, in some cases there just aren't acceptable mitigation means from tree trimming. It's not a lot, but there are places where that's true. We call that the fragile fringe of our system, and reliability issues are chronic in those areas.

And we've -- we've committed to a targeted undergrounding program to move -- first of all, to move those facilities out of back lots to accessible front lot location, first and foremost, and then underground them so that they are out of that tree canopy environment.

COMMISSIONER CLARK: Thanks.

MR. CUTLIFFE: It's a combination of those things, I believe, is the way to go.

COMMISSIONER BROWN: Commissioner Polmann.

COMMISSIONER POLMANN: A quick follow-up on Commissioner Clark's point. And this gets back to the issue of underground versus overhead, and the value of undergrounding.

I know some folks, some quite well, that have underground power and they were out of service for six, seven, or eight days, because the circuit that they are on has overhead lines.

And -- and to the point of segmenting, perhaps it would be helpful in an effort for improvements

to look at those types of circuits where the customer is being served by underground, but their feed source is overhead. So where is it from -- from a design from an engineering improvement perspective that you go from the neighborhood back to the feed and segment that out so that the local customer is -- is better protected?

So just the thought in terms of the improvement. And I think the Commission might look favorably upon those types of things, so that you have got smaller local distribution that's better protected and can be automated in the switching process --

MR. CUTLIFFE: Agreed.

COMMISSIONER POLMANN: -- so just a suggestion.

Thank you, Madam Chair.

COMMISSIONER CLARK: I am sorry, I have got to follow with one -- one statement regarding the undergrounding.

One of the things that I do want us to be cautious of as we look at where we take on undergrounding projects, and -- and we call it hardening in light of the fact we are hoping to achieve some significant results out of it. But in

places where we are doing this to mitigate having to do proper right-of-way maintenance, then that becomes a cost issue that concerns me. And that's passing costs on to customers based on someone else's decision, not that customer's decision.

And I would just -- just want us to be cautious as taking on massive underground projects just to keep from having to do proper right-of-way maintenance in the area that's being preempted by some local ordinance.

COMMISSIONER BROWN: Because it may not be the elixir.

COMMISSIONER CLARK: Exactly.

COMMISSIONER BROWN: And just -- I guess we are done with questions here, so just a comment to Duke.

I wanted to express appreciation for your investment -- further investment in modernizing the grid, as well as improving your communications uplift. I know you are going to -- it looks like, from your filed materials, spend a great deal of capital improving these for the benefit of all your customers. So I commend you on that initiative -- those initiatives.

With that, we are going to move on to Tampa

Electric, seeing that there are no other questions.

Ms. Regan Haines -- Mr. --

MR. HAINES: Good morning, Commissioners.

Yeah, Regan Haines. Tampa Electric. I am Director of Transmission and System Operations. And I appreciate the opportunity to be with you here this morning and talk about this very important topic.

And I will apologize in advance, because you are probably going to hear a lot of things that are repetitive and a general theme because there are a lot of common issues and challenges that each of the utilities faced.

And rather than going through our general restoration process, because that -- that, again, is very similar across all the utilities, I thought I would focus on our experience with Irma, and give you some details around -- around that.

And I think we have a very good story to tell with Tampa Electric's performance and how we responded to Irma, and the benefits that storm hardening provided us, and I will go through that.

It's been said that Irma was really a record setting hurricane for us. It was the largest that impacted our service territory since Donna in 1960.

And so four key points that I would like to make before I get started is first and foremost, we had thousands of foreign resources working on our system around the clock. And I am proud to say that we had no serious safety incidents during our restoration efforts.

Secondly, well over half of our customers were impacted by Irma, and we were able to meet our restoration objectives of getting 90 percent of those customers back within four days, and over 100 percent, or 100 percent, within seven days, utilizing those 3,400 foreign resources that we had to bring on our system, largest ever undertaken by our company.

Thirdly, the investment and storm hardening that we have made is paying off. We saw much less pole damage following Irma than the 2004 hurricanes, and that resulted in much shorter restoration times for our customers.

And then last, communication and the use of social media does make a difference.

So for us, we started preparing for Hurricane Irma on September 3rd, a week before we were impacted, and we spent that time running different scenarios. And as you recall, the storm's path

kept shifting to the west, and we were able to acquire those 3,400 resources from 90 different companies that week. And so they started traveling our way. And based on those resources, we set a restoration goal of four days to have 90 percent of our customers back in.

And we started seeing outages on that Sunday, September 10th, peaking right after midnight. We had 335,000 customers that were out at the peak, and over 425,000 of our 752,000 customers, or 57 percent of our customers, were affected by the storm.

That first day after the storm cleared, we performed initial damage assessment and established a global ETR of the following Sunday at midnight to have all of our customers restored.

We set up six staging sites, or incident bases. Again, the largest undertaken by our company. And worked that week, and we were able to meet our four-day restoration goal and our global ETR goal.

As far as the performance of our system and T&D infrastructure, we thought it performed extremely well, again, due to the efforts of the storm hardening. Irma was a much larger storm than

what we saw in 2004. And while we had more customers that were impacted following Irma than those storms, there was less damage, and we were able to get our customers back on in much shorter restoration times.

So some information on kind of how our system held up. We have 25,000 transmission structures, and we only needed to replace 10 of those, and those are all non-hardened transmission poles.

Of our 263,000 distribution poles, we only needed to replace 165. Again, far fewer than what we had in 2004, and only 20 of those we would consider to be hardened distribution poles.

Our underground system, we did not have, really, any issues with that as you would expect with no storm surge in our area, or significant flooding, so underground held up very well.

And our forensic analysis revealed similar to what you have heard. It was conducted by a third party. Most of the damage that we experienced was not pole failures, but line feeder and lateral line damage caused by windborne debris and trees outside the right-of-way.

Again, challenges to -- to our restoration, you know, one of the big ones first is just the

storm path and the weather forecast uncertainty. It kept shifting, and that caused resources by companies that we normally get help from to kind of hold those resources because they weren't sure if they were going to be impacted. So that created limited resource availability both from a labor standpoint, and what's been mentioned, hotel resources were very tight for us.

Road congestion caused by returning evacuation traffic was a challenge for us, as well as trees outside the right-of-way.

I will say our communications with our customers and our key stakeholders, we thought, was very successful for us. We leveraged several channels to get key messages out; you know, whether it be our -- our company website outage map; our IBR system; direct email that we had with customers, and Twitter and Facebook social media networks were used.

And those messages involved, you know, preparations that customers should be taking ahead of the storm; safety messages, whether there is a line down or improper generator use following the storm; and how to register for our power updates program that customers can get updates on outages

through text messaging.

We also used the opportunity to get educational information out to our customers as far as what our restoration process is, and philosophy and priority orders.

And finally we issued photos and videos of crews in the field restoring certain areas, and we were able to get that on our website and our Facebook.

Now, while restoring customers is a core competency for us, it's something we do every day, we are always looking for ways to improve and incorporate lessons learned, whether it be our training sessions, our mock storm drills or actual storm events. And some of those areas that we've identified following Irma is ways to, some of them have been mentioned, is to enhance our coordination with our local governments on establishing restoration priorities, but also enforcing Right Tree, Right Place programs. Enhancements to our wire-down process, we had over 1,400 wire-down calls that came in.

We are going to have an opportunity to expand our storm plan to deal with a much larger storm that would require significantly more resources.

Opportunities to increase the granularity and frequency of posting ETRs to meet our customers' expectations, and finally streamlining our outage communication technologies.

Some things went well for us, I would like to highlight key successes is we were able to use call center mutual assistance, handled 20 percent of our calls and allowed us to achieve an average answer time of 47 seconds.

Our process to prioritize critical facilities, such as hospitals, nursing homes and water treatment plants.

Targeted and consistent messaging to key officials in governmental agencies. And we were able to implement our storm plan and effectively manage over 3,400 external resources, the largest ever by Tampa Electric Company.

And lastly, we developed the global estimated restoration goal of 24 hours after the storm cleared, and we were able to meet that restoration target with no serious injuries.

So again, I appreciate the opportunity to be here, and I would be happy to answer any questions you have.

COMMISSIONER BROWN: Thank you, Mr. Haines.

Chairman Graham.

CHAIRMAN GRAHAM: Thank you.

Mr. Haines, what percentage of your system is underground? Rough numbers.

MR. HAINES: Roughly 40 percent.

CHAIRMAN GRAHAM: What problems, if any, did you have during Irma for any of the underground lines?

MR. HAINES: Really, no different than you would see during a normal week during storm season, or in September. So you have your normal amount of transformers that fail, or cables that fault and fail, but not an excessive amount of damage to the underground system that we saw.

CHAIRMAN GRAHAM: Chairman, can I ask that question to the other two?

COMMISSIONER BROWN: Yes.

CHAIRMAN GRAHAM: I forgot to ask.

COMMISSIONER BROWN: You are the Chairman.

CHAIRMAN GRAHAM: Not today. What -- Bryan, what percentage is Florida Power & Light, and what, if any -- I mean, if you had problems, kind of elaborate what problems you had, if not.

MR. OLNICK: We are also in a plus 40 percent, a little over 40 percent total underground today.

During -- during Matthew and Irma, in -- in Matthew, in particular in some coastal areas, we had some areas that got washed away that were in some coastal, but it was pretty limited. That was, again, very small instances there.

Probably the bigger thing in -- in Irma was, surprisingly, we did have some damage from windblown debris. We did have damage to transformers' switchgear from trees falling onto them. So a little different than you would normally see day-to-day.

We also had -- in certain parts of the state, we did have more uprooting of underground equipment than other areas. Keep in mind that roughly two weeks prior to Irma, we had already had record rainfall of 16 inches or so.

CHAIRMAN GRAHAM: Everything was soft.

MR. OLNICK: Everything was soft. And so there were a lot of -- there was a lot more uprooting, I think, that went on than we may have seen in the past, and I think that was probably a contributing factor.

So a little bit more uprooting in certain areas on the southwest and the southeast coast. But again, I think it was probably just because of

the magnitude and the size of the storm. It was so big, and there was so much of it that, on a normal day-to-day, you may get a little of it, but you multiply that because of the size of the storm, there was a little bit more of that.

So that was my guess, in general, what we saw on the underground side.

Underground performed very well. You know, we did have a lot of flooding around the state, but it was not as much of an impediment in this -- in this particular situation.

CHAIRMAN GRAHAM: Thank you.

Jason.

MR. CUTLIFFE: We also had experience with uprooting that took out switchgear and transformers. We had some live-front switchgear that was -- that was taken out by flooding and the water level rising.

Irma affected all 35 of the counties we serve. So -- so just --

CHAIRMAN GRAHAM: Back up to the flooding. What -- what happened? I mean, walk me through that one.

MR. CUTLIFFE: Yeah. So switchgear is like a central distribution point for underground,

where -- where loops come in and can be opened and closed in one place. And we have a vintage of equipment that goes back to the late '90s, where the terminations inside that equipment are, we call it live-front. Meaning that there are parts that are exposed to the air inside the cabinet.

Everything we buy now is dead-front. It's insulated, and it's -- when it's put together, it's water tight.

So in some cases where we had heavy rains that raised the water table up, the moisture got inside the cabinet and it caused flashes between the energized pieces of equipment that are exposed inside those gear, which is something that happens occasionally with heavy rain events.

And again, it's always a challenge to compare hurricanes. Irma being so large, and affecting every one of our counties, we saw more of everything in that -- in that event, but -- so the underground was not, you know, we did have some -- some hurricane impacts. Overall, less than half the outage events on underground equipment. It takes longer to restore them. And in a lot of cases, our underground, when it was out, it was because it's fed by overhead further upstream.

No question it performs better in a hurricane, but it does bring a unique set of challenges for restoration.

CHAIRMAN GRAHAM: Now, what percentage are you?

MR. CUTLIFFE: So we are -- we are 43 percent underground today. And a vast majority of Greenfield Construction is -- is underground naturally. But that doesn't move the needle very quickly in the overall, because we don't -- you know, we don't build our system more than one, two three, percent a year. So just by the math, it doesn't change the percent underground.

What will move the needle for us is the -- the targeted undergrounding I mentioned. At the conclusion of that program, we will be somewhere between 47 and 48 percent underground.

CHAIRMAN GRAHAM: Thank you.

Thank you, Chair.

COMMISSIONER BROWN: Commissioner Clark.

COMMISSIONER CLARK: Yeah. I -- looking back at TECO systems specifically. You didn't experience -- we talked about the performance of the underground, you didn't experience the surge that was anticipated from Irma, did you?

MR. HAINES: No, we did not.

COMMISSIONER CLARK: Had that event -- had that event happened as anticipated, what do you think would have been the underground performance? What would your results have been then? I am asking you to speculate way probably more than you would like to but --

MR. HAINES: Yes, we have to run some modeling on that to see, based on that storm surge, and the different elevation levels, and where some of our underground equipment are relative to that surge, what the potential impact would be.

COMMISSIONER CLARK: It would be safe to say that there would have been -- the performance would not have been as good, and you would have had probably significant replacement cost on that equipment; is that correct?

MR. HAINES: Absolutely, yeah. And like Duke pointed out, you know, the live-front switchgear. We have live-front switchgear, so if you do have flooding, you are going to have issues with that failing.

COMMISSIONER CLARK: A couple other questions, Madam Chair.

First of all, I know each of you did a great

job in terms of your presentations, but TECO, I wanted to just specifically commend you guys. The PR aspects of your presentation were very strong, and I really like the statistics that you including in there -- your outage, your response times, a lot of good information. And by all appearances, you guys did a really good job of communicating with the customer base during the storm.

One of the questions I had is related to your outsourcing of your calls. That's got to be a tough decision for any company to make to begin to outsource calls, especially during an outage time.

How did your customer interface system -- FPL kind of explained how theirs worked, but how did your customer interface system work with a company that you outsourced with in terms of their ability to actually see and understand what was going on at the local level from that third-party location?

MR. HAINES: I believe most of the mutual assistance is through an IBR system, so they have the ability -- it shortens the weight time, so it gives the customer the ability to get in and report an outage, or get information on an outage much quicker. And, you know, we have that set up day-to-day too. If we get hit with major

thunderstorms during the summer, and we can't process the calls quick enough, we have an overflow third-party company that we use to help us process those calls quicker and allow our customers to get access to their accounts and report the outages quicker.

COMMISSIONER CLARK: And my final question was, in the presentation, there were two numbers that I was a little bit curious about. On page 17, you admitted that there was no transmission structure damage, but earlier you had reported that you had 10 structures failed that were non-hardened. I was just kind of curious if that was -- if I missed something here.

MR. HAINES: Right. Well, just to clarify, on page 17, that's the results of the forensic analysis that we performed, and we had a third-party vendor come in and go in the field and actually patrol 21-square-mile areas of our damaged system. And it was mostly our most heavily damaged areas. And in those areas, they documented the damage that they saw.

Within those 20 square miles, they observed basically 10,000 distribution poles, and I think they documented that nine of those had failed. And

did not see any transmission failures in that sampled area.

COMMISSIONER CLARK: Understood. Thanks for clearing that up.

COMMISSIONER BROWN: Commissioners? Commissioner Polmann, followed by Commissioner Fay.

COMMISSIONER POLMANN: Thank you, Madam Chairman.

You had indicated, as you just responded to Commissioner Clark, no storm surge as was anticipated, and I think you said no significant flooding related to Irma. However, there are areas within the City of Tampa where there is significant flooding, what I would call significant flooding in routine places; you know, rain an inch, and you have got flooding in South Tampa that's, like, three feet. I have had the pleasure of driving through that by mistake, you turned left when you should have turned right, and forget about it. The Chairman is quite familiar with that as well.

So do you have experience from normal routine operations from what anybody else in America would call significant flooding?

COMMISSIONER BROWN: Yes.

COMMISSIONER POLMANN: Do you have underground

facilities in those parts of the city?

MR. HAINES: Well, that's what I was going to point out. I think, in areas like South Tampa, that you mentioned, most of that is overhead, and so the flooding didn't impact, you know, underground equipment. Most of our underground is kind of northwest, some of the newer areas.

COMMISSIONER POLMANN: Right. Right.

MR. HAINES: The issues we had there was the rear lot and the trees outside the right-of-way issue.

COMMISSIONER POLMANN: There have been rumors I have heard in various places, even read it in some literature about higher tides. I don't know, maybe some of you have read these rumors, too. And I think we've had some in Southeast Florida as well. I don't know if you are familiar with these rumors.

Is any of that occurring in the Tampa Bay area that may have affected your facilities, and again, with regard to -- you probably don't have underground along the coast, any experience there? And I will ask the same question of FPL.

MR. HAINES: Yeah, I mean, we have underground facilities along the coast, you know, along Tampa

Bay area.

COMMISSIONER POLMANN: Right.

MR. HAINES: And we have substations, too, that are located in areas where there is five, six feet elevation above sea level. So there is exposure there. I just think, like you said, we didn't see that increased storm surge from Hurricane Irma that was initially anticipated, and when at one point it had coming, you know, very close to Tampa Bay.

So, you know, at times in the past when we've had flooding, we will see issues with our underground facilities, it just we didn't see that necessarily with Hurricane Irma.

COMMISSIONER POLMANN: One of the major concerns that I have, and I think needs to be discussed going forward, in any restoration effort, for infrastructure that's at the coast, if we could anticipate that any of these rumors might, in fact, be true, and we are talking about infrastructure replacement, restoration efforts that are capital investments that you are talking about a useful life that's going to be 30, 40, 50 or more years, let's not put it back where it was. We should anticipate changed conditions.

So if you have something that's underground, with a water table that's five feet, you know, if it's going to come up a foot in the future and it's subject to saline water intrusion, that -- that depth, you know, if it's going to be three-and-half feet, that might make a difference. If it's going to be three feet, or near ground surface during a storm surge, that's not a good investment --

MR. HAINES: Right.

COMMISSIONER POLMANN: -- if that's going to be there for 50 years. So just the point that I think we will be looking more closely at when the cost of restoration, even though underground might be a good idea, it might not be a good idea.

MR. HAINES: Right.

COMMISSIONER POLMANN: So to FPL, what -- you mentioned washout. Again, that's from at the coast. Do you have any, again, rising water table issues, not necessarily during a storm?

MR. OLNICK: Like red tide?

COMMISSIONER POLMANN: Kind of like the king tide issue.

MR. OLNICK: King tide?

COMMISSIONER POLMANN: I mean, we are seeing water in the streets in Miami, I think. I don't

know if those pictures are real.

MR. OLNICK: So all rumors aside, there are certain areas that, like the Miami Beach area and others in Miami, that at certain times of the year king tide can be a problem.

And so looking at -- looking at undergrounding, you do need to look at it long-term. And so to give you an example, the work that the City of Miami Beach and other coastal areas are doing to put in pumping stations, and so forth, to mitigate things like king tide. We work very closely with them to locate transformer locations several feet above where they would normally have been placed to ensure that, long-term, it's the right engineering solution.

And so you do have to look at undergrounding in certain areas, and how you might modify or mitigate it for maybe a specific issue for that area, like we've done with the Miami Beach area.

COMMISSIONER POLMANN: That addresses my question. Thank you.

COMMISSIONER BROWN: Commissioner Clark, we are still on TECO. Did you have a question?

COMMISSIONER FAY: I am Fay.

COMMISSIONER BROWN: I meant Fay. Oh, gosh.

I am sorry. I have been thinking about Commissioner Clark over here.

COMMISSIONER FAY: That was quite the comment, Madam Chair. Thank you.

I was actually going to echo Commissioner Clark. So I think the data and the information on the customer and stakeholder communications you provided was excellent, and so we appreciate that.

My question within this data, and of course you give a lawyer numbers, there can be issues, right? And I am going to try to narrow in on it. But you state 90 percent of your calls are answered in 120 seconds or less, and your average call, live call was answered in 47 seconds. It says, abandoned calls were about six percent in those calculations.

Can you talk about -- there is a little bit a of a gap in there, and I am not sure if those are just the extended calls that weren't included in the 90 percent analysis. But was it a mutual aid that you used to get to those numbers and to be able to provide the live response time under a minute?

MR. HAINES: And you are look -- excuse me, Commissioner, you are looking at --

COMMISSIONER FAY: So I am on page 19 of your -- your presentation. And I am on the third, I guess, little line -- under the third line there, I will call them bullets but --

MR. HAINES: Right. So 90 percent of our calls were answered within 120 seconds, and we average 47 seconds. So abandoned calls, or somebody got tired of waiting, are at six percent, you know, hung up and didn't wait for an answer.

The question about the live calls, is that 115,000 calls were handled by a live agent?

COMMISSIONER FAY: Yeah, I guess there is just a little bit of a gap in there. I was just trying to see -- it's a two-part question; one, kind of what that gap was. I am guessing those are just additional calls that -- that exceeded that 120-second threshold, is that --

MR. HAINES: That drove the average down?

COMMISSIONER FAY: Well, that essentially that's not including that number.

MR. HAINES: I believe that to be the case, but we would have to follow up on that.

COMMISSIONER FAY: Okay. Great.

And then the -- the -- being able to achieve that response time, what -- what did you -- what

did TECO do to set up that -- that system?

MR. HAINES: Well, we had brought in a significant increase of customer service representatives into our call center ahead of the storm to take calls, you know, again pre-storm, and then right after the storm they rode out the storm; but then also the use of, you know, the mutual assistance that I mentioned helped us get to these numbers.

COMMISSIONER FAY: And how do you train those -- those folks in the mutual assistance to make sure they are -- they are aware how to respond?

MR. HAINES: Again, those programs are established ahead of time. That's something that we've had ongoing for a while. And it's similar to the mutual assistance we get with our line crews. You know, they come and they kind of know the process, and they are familiar with answering calls during storms, so that -- that training, and those expectations are set up ahead of time with the companies that we use do that.

COMMISSIONER FAY: Okay. Great. Thank you.

COMMISSIONER BROWN: Thank you, Mr. Haines.

You know, one of the greatest advantages of

having a forum like this is to hear lessons learned from the other utilities, and some of the Best Practices that the other companies are kind of employing. And I think something that I heard that I think works, and it looks like Tampa Electric really does strive to communicate, not just with the public, but its community partners as well.

Florida Power & Light's communications app would be a nice little enhancement, similar app, since I think that sounds very intriguing to be able to have that on your phone and be able to get those estimated restoration times.

Same goes for Duke. I think that's just another portal that the companies can explore in communicating with the public.

I am curious about the Smart Grid technology. So we've heard from the different companies about some of their self-healing mechanisms, and AMI meters. What's Tampa Electric doing? How did it -- how did whatever Smart Grid technologies that are across the field, how did they fair?

I know the territory was supposed to -- was expected originally to really get a big storm surge, and then got spared a great deal of the otherwise destruction that occurred around the

state.

Could you talk about some of the Smart Grid technologies?

MR. HAINES: Some of the Smart Grid technologies that we have right now are the mid-circuit reclosers that's been mentioned, that kind of segment the circuits that, you know, for us about an average a thousand customers per circuit.

So to the extent we can locate a recloser maybe right in front of a heavily treed area, where we know an area that causes a lot of outages, we can prevent all of those customers upstream from experiencing an outage.

And, you know, for our system, we have roughly 750 distribution circuits, or feeders. And we are up to about 250 of those have those reclosers installed. Part of our grid modernization roadmap is to continue to install those, and then eventually get the capabilities where we can have self-healing networks, right; and they can automatically reconfigure themselves and pick customers back up and really minimize the number of out outages that -- that the customers experience.

COMMISSIONER BROWN: I think that's great.

What about -- where is Tampa Electric on AMI

meters?

MR. HAINES: AMI, we are currently under contract with a vendor to start installing AMI meters, and that project is under way. We've done a pilot, and so probably within the next three years we should have AMI deployed.

COMMISSIONER BROWN: Excellent.

All right, seeing no other questions, we are going to take about a five-minute break, and we will reconvene at 11:55. We are going to recess for lunch around 12:30, so we are just taking a real brief break to stretch your legs.

Thank you.

(Brief recess.)

COMMISSIONER BROWN: All right. We are on to Gulf Power, with Ms. Adrianne Collins. Welcome.

MS. COLLINS: Thank you. Good morning, Commissioners and staff. Thank you for the opportunity to present today.

Storm preparations and restoration efforts following a major event are a critical part of the service that we provide to our customers. Our team works hard to cultivate what we call a culture of preparedness. The culture is a vital part of the successful restoration efforts.

Gulf Power's preparation is not just for storm season. Our crews and personnel prepare and train to provide our customers with exceptional service all year long, no matter what the weather is.

Northwest Florida has experienced all types of extreme weather conditions, from hurricanes, tornadoes, ice and flooding. Each of these events provides opportunities to learn.

Preparations occur in many ways; from asset protection; pole inspections and maintenance; storm hardening; increasing material inventory, to training our employees and communicating with our customers in the communities we serve.

Employee -- every employee has a storm assignment, and they are trained to prepare to fulfill that role when the time comes. Our storm drills over the last few years continue to challenge our team members to think outside the box and use our well-proven storm restoration plan as a guide to successfully restore power.

When a storm enters the Gulf, we activate our storm center. This moves our team into storm mode, and everyone begins preparing for restoration. Mutual assistance is an important part of this process, where we review our plans and have

conversations within Southern Company, the Southeastern Electric Exchange and the Florida Coordinating Group, to make sure everyone is available to receive and provide the assistance that's needed.

But there is much more to the mutual assistance than getting crews to come help. We have to activate and be prepared for our staging sites and check-in sites to bring in all the contractors, resources and the vendors that provide support in these situations.

As seen in many of these storms, it doesn't affect just one utility, and therefore, we have to balance, as has been discussed already, the resources and the timing when we make those decisions to acquire those resources because the costs can become mounting very quickly.

One of the most important aspects to preparing for a storm is our communications with customers. We don't start building those relationships when the storm is about to come. It's done all year long through timely communications, and we have to work to continue to educate and communicate with them all year long so that when the big storm does come, they are ready and understand what to be

prepared for, and what to expect.

After our storm has passed, our plan really focuses on the substation team leader efforts and roles, and the rest of the company providing them resources to make them successful in the restoration efforts.

We work with the cities and the counties to identify those critical facilities in our communities, including hospitals and first responder facilities. And our team works to restore the power to those critical facilities as quickly as possible. However, it is important to note, just because a customer is a priority, it doesn't mean that they will be the first to be restored. We have a very systematic process where we start out at the substation and work from there, and so they may not be the first ones.

Accessibility is always a concern following a major event. We work very closely with the personnel who are trained and staged in the Emergency Operations Center to work with the cities and counties to gain access to our infrastructure so that we have the ability to restore power quickly.

The first groups that are typically seen by

our customers are usually our engineering and others that are trained in assessing the damage, or evaluating the damage to our system, so that we can be sure to obtain the right resources in the right locations.

Communication is a huge focus of our restoration effort. We know that our ability to deliver timely and accurate information is crucial for our customers so that they can make decisions around the residences and their businesses. I will expand on that in just a few minutes.

Once power is restored to our customers, we then offer assistance to other utilities that may need help after a major storm.

Since 2006, Gulf Power has invested over $250 million in storm hardening. Our focus has been on critical infrastructure, such as hospitals, shelters and commercial corridors. 89 percent of our transmission system is hardened, and we have over 24,000 of our poles, distribution poles that have been hardened.

Gulf Power system sustained minimal damage during 2017 as a result of the named storms. The system performed very well, and the outages that we had, all customers were restored within 24 hours.

No hardened facilities were damaged, however, we did have some damage to non-hardened facilities -- non-hardened poles, the majority of those poles that were damaged were not owned Gulf Power Company.

Storm hardening is, on the overhead system, really is the strengthening of the poles for increased wind loading. And I think what's important to note here is there -- from the wind loading perspective, if you have 100-mile per hour wind, that the pole will sustain that; but you could see that there is other factors if you were to have severe rain, 10 inches of rain or flooding and those wind conditions, the impacts on the poles will be impacted very differently.

In terms of overhead versus underhand -- overhead versus underground system performance, there is a common sometimes assumptions that electric utilities are opposed to undergrounding, and for Gulf Power, it's simply not the case. In fact, 25 percent of our underground -- of our distribution system is underground. Many new subdivisions are requiring underground electric service, and we are happy to work with them, the construction contractors, to install underground

service for them.

Of the limited number of outages that we experienced during Hurricane Irma and Nate, 98 percent of those were on the overhead system, and two percent of those were on underground.

On average, underground customers do experience fewer outages; however, some issues still arise with underground, and the time it takes to do the troubleshooting and repairs, we've experienced that it takes 80 percent longer to do that than on our overhead system.

One aspect to keep in mind from a Gulf Power service area is that 50 percent of our customers live within one mile of the coast, or another body of water. Which means that there is more susceptibility to storm surges or flooding.

For example, in Ivan, we experienced major damage to our underground system in the coastal areas, and power was not restored for weeks in those areas. As been discussed already in here, undergrounding is not the perfect solution for reducing outages and the length of outages from a storm, but there are instances where undergrounding is a best option and benefit for the customer as a whole. We just need to take into consideration all

the different factors and find a balanced approach for finding those solutions.

Gulf Power did not encounter any impediments during the restoration efforts as a result of Hurricane Irma and Nate. We continue to train and continue to have great working relationships with the local entities, mainly through the EOCs, to eliminate hurdles such as road closures, damages, debris removal and vegetation management.

One example was when Gulf Power was called to help out Tampa Electric to restore power after Hurricane Irma, we were able to acquire police escorts to get our crews from Northwest Florida over to the Tampa Bay area.

We work hard to engage our -- we work hard to engage and communicate with our customers year-round, not just during the storms; and we continue to transform the many channels in which we keep up with their needs and communicate with them in the way that they want to be communicated. And those timely communications that are made during the year help us build those relationships for these significant times when we experience these major storms.

Prior to the major storms hitting, we work

with the media outlets to place storm preparedness ads across the service area, and to education them to what to expect to prepare for the outage, and how to connect with us during an outage situation.

One example of this is prior to Hurricane Nate, we sent our customers an email that gave them information they needed to be prepared for the storm, and how they could connect with us to ensure they had the latest updates they needed during the storm.

Our website and social media is used extensively with customers year-round, and we run digital ads and billboards, just depending on the different types of weather situations that we may have, and also have public service announcements on local radio stations.

We want to ensure that we keep the customers informed during these -- during and after the storm, whether it's the hurricane, a tornado or an ice storm. It's in these times that we see that customers have a need for the amount and frequency of information, and we utilize as many different channels to have the opportunity for our customers to get that information. One of those being our storm center website. We improved and launched a

new one in 2017, and it allows our customers easy access to the information from smart phones or tablets, and as well as their computers.

In regards to our outage map, it can be accessed also from the computer or a smart phone, and it gives them the latest restoration times and the crew status. Our customers not only learn about their particular outage, but also get an opportunity to understand about the storm's impact entirety.

In terms of the platform that's used, it's hosted by Amazon, so we are very confident about its ability to handle the high volume of traffic for our customers.

We also have a Gulf Power app and alert, where they can monitor and track the status of their outage, and those alerts can be obtained in any way that they choose. They don't have to have the app. They can receive communications via email, text messages or a phone call.

Regarding social media, we use all the different platforms that are out there and available. And as of today, we have 100 percent response within 15 minutes during normal business hours. And, of course, during a major storm

events, we are active on Facebook throughout the entire event, and we also bring in additional social media to address coverage 24/7.

From a customer care center perspective, we have -- do this during normal just regular daily operations, but also during storm situations, where we have our sister companies within Southern Company that are able to take the calls. And actually, in Hurricane Irma, because we did not have the significant outages, we actually took calls for a sister company.

In terms of our media relations, each year prior to the hurricane season, a team -- our team conducts a tour with the media and sends communication storm relevant information to them to ensure they know -- they know how to communicate with us during a storm.

And then after a storm has passed, we provide the media with multiple restoration updates through daily releases, which typically corresponds with the timing when we send the updates to the State EOCs.

We do have dedicated reps at every one of the county EOCs as well as the State EOC so that we can deliver those consistent messages regarding outage

numbers and restoration times.

In terms of suggested improvements, we don't see any major changes that need to be made to the existing initiatives. Many of the initiatives are already part of what we do on an everyday basis. We plan to continue to implement our 10 point plan and make adjustments as needed.

To address the question from Commissioner Clark, I would say that the biggest opportunity that we have from a commission perspective to be able to help us out is what my colleagues have already communicated. We have 31 percent of our infrastructure on non-electric utility poles. So an inspection process on there would be something that would be a benefit to us.

From the communications standpoint, I think one of the things that we saw, while we may not have been affected, when you see all the named storms and the responses from our customers, and what we saw was the perception or understanding that, as we've talked about all the storm hardening efforts that we've done, the potential thought that they will not experience an outage, or the length of outage time may not be what they would have expected in the past.

So part of that goes back to communicating with our communities and our customers prior to to help them understand the differences between a major storm situation and other type of storm events.

And also, it includes us reaching out to our community, government leaders and, again, also explaining storm related education programs to them.

The other piece of that is just helping the individuals understand that in these major storms, that we do have incorporated these technologies, but as been previously shared, that you are still going to have impacts from trees that are off the right-of-way, or other conditions that are outside of our control.

The -- some of the other things that we are doing in terms of communications for preparation prior to the storm really is around presenting the messaging during the annual EOC storm preparedness conferences across our service areas, as well as the media visits that we are going to, and then mailing out brochures to all of our customers around storm preparedness.

So again, as we prepare for storm and the

restorations following a major storm event, the critical part is that we continue to communicate with our customers, and that we learn and seek from the Best Practices, for instance, the things that we've talked about today; and that there are takeaways after every event, whether we were impacted directly or not.

So thank you for the opportunity to be here and share and learn from the workshop. That concludes my --

COMMISSIONER BROWN: Thank you, Ms. Collins. I want to say a very thorough presentation. You have a very robust communications process in place, so I commend you on that.

MS. COLLINS: Thank you.

COMMISSIONER BROWN: Commissioner Clark.

COMMISSIONER CLARK: And thank you for addressing my two wishes question, you have still got one left, by the way, so if there is another one you would like to add to the joint use poll agreement, we will take it.

I would commend you, again, echoing Chairman Brown's comments regarding your communication plan. You did an excellent job in the presentation, but as much so you did an excellent job in

communication during the storm.

And one of the things I would compliment you on is the app. And I believe someone else mentioned that in terms of some of the other utility companies. That -- that is a very beneficial feature to the consumers, and I have used your app on a number of occasions myself. And that is a really, really good customer enhancement tool that I think everyone can take a lesson from. Thanks.

MS. COLLINS: Thank you.

COMMISSIONER BROWN: All right. Thank you.

Commissioner Polmann.

COMMISSIONER POLMANN: Thank you, Madam Chairman.

You had mentioned something that we haven't yet heard today, and I appreciate your bringing it up, and that is ice. It probably does apply to at least one of the other utilities, but you had mentioned also 50 percent of your customers are near the coast, and I think there is some commonality with the other utilities. But with regard to ice and perhaps your terrain within your service area, and maybe the soil types and things like that, you had -- you do have some -- some

differences from other parts of the state.

If you could perhaps comment on what your utility encounters that may be different from elsewhere in Florida. Ice, in particular, is, I am sure, a challenge that we don't typically think of across much of the state. So anything you can -- you can bring up that might be helpful to us as we look at how to deal with storm response.

MS. COLLINS: I think what you shared, probably one of the biggest differences is our susceptibility to having more potential for that cold weather, and the -- and the ice storms, and our customers not being used to those conditions around what does that do on roadways, and the ability for them to be able to travel, and then the potential additional impacts and the opportunity to create additional outages that weren't caused maybe initially by the storm, but by them trying to travel and navigate to try to, you know, whatever it is; maybe trying to get food, or trying to get to another location.

So I don't know that I have anything additional to add, but, you know, the ice doesn't happen very often, and you don't get a lot of experience within our area. Now, we do get

experience going off on mutual assistance for the crews that go out there, but I think it's a very different experience for our customers.

COMMISSIONER POLMANN: Has there been any occasion where you actually have damage to facilities or equipment related to cold weather and ice?

MS. COLLINS: So yes, because of the amount -- when the rain freezes and gets on, for instance, the pole or the structure, and then the amount, the volume that's there, you do have the ability for damage to those structures, yeah.

COMMISSIONER POLMANN: Okay. Does that provide challenges that are distinctly different than wind or -- or flooding that --

MS. COLLINS: Other than that the cause being different. In terms of the restoration efforts, you are still going to go about and utilize the same restoration plan. Again, the difficulty will be now that some of the -- the difficulty will be accessing, will be road conditions that now have ice on them versus, you know, just having -- you will still have potential trees, because the trees will be down because of ice or, you know, snow that's built up on them, so you will have those

kind of things. But really the difference is the icing of the -- of the roadways and access to them, or the closures of bridges because of the icing.

COMMISSIONER POLMANN: Thank you.

MS. COLLINS: You are welcome.

COMMISSIONER BROWN: Commissioners, any other questions?

Commissioner Fay.

COMMISSIONER FAY: Just one quick question, Madam Chair.

So you stated that you have no impediments for restoration, and you work well with the local entities. I know the -- I think different areas of the state may vary on how cooperative those relationships might be.

Can you talk a little bit about what -- what Gulf Power has done to ensure when a storm does occur, that they are able to -- to get the necessary resources or responses they need from the local entities?

MS. COLLINS: I think it's having the frequency and the regular discussions, and not just around the storm season.

For instance, we had a tornado that impacted part of our central area here, and it didn't cause,

you know, major significant outages; but because we already have those relationships on a kind of day-to-day situation, that we got assistance from the City to help out with blockage for roads so that our folks could do the repair.

So it really is just that regular routine dialogue, and interactions around how we respond, besides being in there. So it's a -- it's a relationship that has been cultivated over a long period of time, and then continuing to maintain those relationships.

COMMISSIONER FAY: Yeah. And you also gave an example of being able to help another utility by having resources from, I guess, the State or some other entity to get those trucks to where they needed to be. Can you talk a little bit about how that came about?

MS. COLLINS: Sure. As we were seeing the need to respond quickly to the areas that were largely hit, one of the impediments was getting everybody down there. There was a lot of folks on the roadway, and the number of trucks, so it was discussed on calls that we had the ability to get a police escort that would allow you to move down the road and not be slowed down by the other general

traffic of folks that were trying to either get back to the areas that they had left from, or trying to get to the area to provide the support.

So it was through dialogue and conversations through our different industry groups that made that possible.

COMMISSIONER FAY: Great. Thank you.

MS. COLLINS: You're welcome.

COMMISSIONER BROWN: All right. Seeing no other questions from Commissioners, thank you for your participation here today.

Moving on to FPUC, Jorge Puentes or George?

MR. PUENTES: Good afternoon. I respond to both. So if you like --

COMMISSIONER BROWN: Yes.

MR. PUENTES: -- to roll the R that's perfectly all right.

COMMISSIONER BROWN: Yes. Great.

MR. PUENTES: Yes, again my name is Jorge Puentes, or Jorge Puentes. And I appreciate the opportunity you gave FPU to allow to share our hurricane preparedness and restoration overview.

We -- we -- we have provided -- tried to answer the questions that were requested by looking at the process that we do with prevention, and then

looking at the restoration process.

And in terms of the prevention process, we have followed the term -- the 10 storm initiatives, storm hardening initiatives, but I would like to give you an update of where we are at.

Since 2006 to 2017, we -- on the wood pole inspection, we have an eight-year cycle. We have completed 1.25 cycles. And we have inspected 32,921 poles. And out of those inspected, we have replaced a total of 2,186.

In terms of the vegetation management, we have a three-year tree trimming feeder cycle. We have completed three of those up-to-date. And in terms of the laterals, we have a six-year tree trimming cycle. We have completed one-and-a-half of those. That has made us being able to complete combined feeder and lateral mileage of 1,338 -- 37 miles, excuse me.

We have also during that time completed a joint use pole attachment audit. That was completed in 2016.

In terms of the transmission climbing inspection --

COMMISSIONER BROWN: Could I stop you right there?

MR. PUENTES: Sure.

COMMISSIONER BROWN: You said the joint use audit, pole audit.

MR. PUENTES: Joint use pole attachment audit.

COMMISSIONER BROWN: So what did it reveal?

MR. PUENTES: In terms of, we were able to see that there were some sections of the counts of some of the poles that the utilities were -- that were attached to us were not properly being accounted for, so we were able to see that.

But one thing that it revealed is also that in certain areas of our population, let's say for a feeder, there are utilities that our communication companies that are attached to us that own several poles in that feeder. And during the storm, fortunately, we didn't have the issue, but if that would have been affected, they are not required to do storm hardening, and we are --

COMMISSIONER BROWN: As we discussed, yeah.

MR. PUENTES: -- so that created an issue. So we were able to discover many of these things.

COMMISSIONER BROWN: Great. Please continue.

MR. PUENTES: Sure.

In terms of the transmission climbing inspections, we do that every six years to our 138

kV and 69 -- 69 kV systems. The last inspection that was completed was in 2012. And in 2018, we are going to complete the other climbing inspection.

During that time, also we have installed about 85 concrete poles on the transmission system, the 69 kV side, which included a rebuilt of a one point -- 1.2 mile Rayonier -- line to Rayonier.

And we have also completed many distribution and substation projects. As you know, we have recently made an interconnection with JA, providing more reliability to our customers -- I mean, to FPL instead of JA. I apologize. We have both providing ties, so we are able to feed from either location in case we would lose one.

In addition to that, we also were able to build a power plant on -- inside the island -- on the island that would allow to pick up most of the critical customers and some of the other customers and businesses that would need to be opening.

We have also implemented a GIS and OMS system. We have issued a new lineman application so that our linemen are able to take a look at what circuits are affected in certain areas, and they are able to clear those outages from that iPad, and

that has been very useful.

But in total, we have spent nearly 29 million -- invested $29 million in -- in funds. Out of those, about 18 million have been capital, and 10-and-a-half million have been an O&M.

As we prepare for a storm, we -- we are a culture that is always prepared, as most of my other colleagues have been talking about. We also have some outreach programs where we send brochures prior to hurricanes. We post information at our website. We send bill inserts, and we do public announcement.

As part of preparing for the storm, we have -- get all our emergencies procedures ready, and we establish our communication plans.

We also do an annual preparation storm with all our regions, and where we discuss -- as you know, we are not only an electric utility company, but we also own and distribute gas and propane, but we all participate in this -- in this exercise.

And while we also do that, we ensure that our system and our facilities have been inspected. We also ensure that we make good coordination with our local EOCs, and also with the State EOC, as they are asking some of the outage information on a

regular basis, as the outages are occurring. And we participate actively with our SEE, Southern Eastern Exchange and Southern Gas Association for mutual assistance.

In terms -- one of the other things that we do as the hurricane gets closer, we have also prepared our employees to be ready in their personal lives, because one thing that we have noticed is employees also that live in the area are effected by these hurricanes, and we want to train them so that they also prepare their storm plans, and it's something that we like to do.

We also redeploy call center resources, depending on where the storm is heading. So depending on the location, we might disperse our call centers to different locations, and they are able to help depending on where the storm is going to be impacting the area.

Other preparations that we all do is review assignments and make sure that inventory levels, fuels, and all the necessary items that you would need to be able to respond to a storm are taken care.

And when it -- when -- when it comes to restoration, in terms of the restoration, we apply

a systematic approach. We use our OMS and SCADA systems to allow us to organize and prioritize the information. We send crews to go out and survey physical damage. We send tree crews in advance to clear the area so that the electric trucks can be -- are able to come over and help out in those locations.

And in terms of restoring power, our approach is to first get the generation going, like in this case would be our Eight Flags generating station, then make sure the transmission system, the interconnect with FPL and JA are in good shape, and then make sure the substations are good. If those are restored and in proper functioning mode, then we would move on to feeders, and then the laterals and customers.

For -- when we talk about customers, the priority for the customers that we emphasize is hospitals first, police, fire department, EOC centers, too, or shelters for the elderly. Then we do water and sewer facilities. And then we try to restore food areas and restaurants for customers.

As we look at the hardened versus non-hardened facility performance, we have a good picture here. We really did not have any damage to storm

hardening transmission poles or damage to storm hardening distribution poles. So no damage to that, which shows --

And in my presentation, page nine, I show a picture of a good example of how storm hardening has helped. This is a picture taken during Irma. And you can see on the left-hand side, there is a feeder that was recently storm hardened; and on the right-hand side, you have the ocean, and we are about 600 feet. And the wind was blowing, and you can see that one of the poles on the other side of the street is down, and the other one that -- the feeder that was storm hardened had no damages.

In terms of Hermine and Matthew and Irma, Hermine didn't affect us as much. We had about 22 repairs, and we replaced about -- we had zero replacements to non-hardened facilities.

In Matthew, we had a bigger impact, and we did about 189 repairs, and replacements were about 14 to non-hardened facilities.

Irma was a much bigger impact. We had 311 repairs, and we replaced 37 poles and other infrastructure, but they were to non-hardened facilities.

As we look at the underground versus the

overhead facility, in some of the pictures that I show there, just like the other colleagues, I think the main damage was done to -- by the trees, by the trees. And we didn't have to do any repairs to the underground, except that when there was so much tree damage, that the customers were piling their debris on top or around the transformers, and when the crews that came around to clean the debris with those big jaws came over, they picked up the transformers too, and then we had to go in and repair -- repair some of those high mounted transformers.

As we looked at the impediments to restoration, we can say that in one side, as you know, the Amelia Island, there is only two bridges that have access to the island, and after 40 miles per hour, they close those; or they also, depending on the size or the number of the hurricane -- this is a category -- they close the island, and they have mandatory evacuations. So those were the impediments for us, because we couldn't be there while everyone was is evacuated, so that happened for Matthew and Irma.

Also another impediment is the magnitude and track of the hurricane. Securing mutual aid

assistance is kind of difficult at times because you don't know where that hurricane is going to move, and the resources that you thought you were going to get, you might not be getting, and it happens also internally.

Clearing vegetation is another impediment. And, again, the winds and rain and flooding.

In terms of the customer communications, this is an area where I am happy to report that FPU has been a winner of a Best Practice Bronze Award by Shotwell's 2018 Outage Communications awards. And we were able to win this because we are able to restore most of our customers fairly quickly, and we provide a single page where most customers could go in, and we provide a lot of information about the hurricane, maps of where the power is being restored, and that has helped them a lot.

We also use Facebook, Twitter and the FPU.com website also. And we also have a mobile FPU.com in there.

Another thing that we like to do is, because so many customers were affected, we have coordinated home visits to the customers to see how they are doing, and we have written letters from the President to appreciate our customers' patience

with us.

In terms of suggested improvements, and based on our lessons learned, we -- we -- our -- FPU's feeling is that we would like to continue to invest in all storm hardening activities. We think that that's a very good -- those 10 points are good initiatives. Continue to invest also in technology and advances in hurricane predictions, such as the PURC, Public Utility Research Center. Continue to improve GIS systems, ONS, OMS, IBR implementation and other technologies.

In the future we also are planning to implement AMI. We currently don't have that, but that is in the plan, and we are working, I think, with the staff on some of this.

Another item that we thought it would be to evaluate our management and feeder laterals schedules. Right now we have a three and a six schedule, but that could change depending on some of the analysis that we are doing.

Another suggestion would be to closely work with customers to avoid storing on top of our transformers all the debris during storms. And then continue to improve internal resource and allocations, as well as securing mutual aid.

That concludes my presentation, but I know that Commissioner Polmann, you had asked about what would be one of the actions, or some of the lessons that we have learned that would help to resolve sticky issues with the current and local government.

What I can offer, Commissioner Polmann, is that we really try to get them involved as much as we can. I know that the tree trimming issue is something that we all struggle with because they are dealing with customers themselves, because they are dealing with customers themselves because they manage that. And just getting them involved and continuing communication is the best thing that we have noticed that works. But it's still a touchy issue. The tree trim issue, I agree, is very difficult to deal with.

In terms of your question, Commissioner Clark, about two things that you would like us to give you. I agree with all our colleagues. I think the joint use issue about non-storm-hardening poles would be one. And then the other one would be, even though we all have mentioned it, would be communications. Continue to communicate with local EOCs and even State EOCs as much as you can,

because communication always gets confusing, and it never hurts to do more of that.

And then in terms of -- Commissioner Graham, you had the question about the percentage of utility -- of underground utility, and that was 19.3 percent is what we have of underground. And with that, I conclude.

COMMISSIONER BROWN: Very thorough presentation.

MR. PUENTES: Thank you.

COMMISSIONER BROWN: Thank you, Mr. Puentes.

Chairman Graham.

CHAIRMAN GRAHAM: Thank you.

Jorge, you mentioned earlier that you can't get back on the island until the storm is over. Now, do you have to wait until the winds stop, or do you have to wait until after they open the bridges for all the residents to come back?

MR. PUENTES: Yes, sir. We have to wait until the wind stops. And even though we are the first utility and personnel that goes in to help and restore the island, it's pretty much predicated on the wind, and they sometimes have to go and have the DOT come in and do inspections, depending on how hard the bridge got hit by winds. So -- but,

yes, we are totally dependent on that.

CHAIRMAN GRAHAM: Yeah, but, I mean, but as soon as the winds stop, they will let you on. You don't have to wait for them to open the bridges to let all the residents on, correct?

MR. PUENTES: We have to -- when -- in the last two evacuations for Matthew and Irma, we always are there waiting for them to let us in, and they let us in after the winds have down, and they try to keep most of the customers away so that we are able to do restoration. But some customers do stay in the island, and they don't evacuate, so, yes.

CHAIRMAN GRAHAM: Well, I just wanted to make sure I understood, because I know -- and it's a safety issue --

MR. PUENTES: Yeah.

CHAIRMAN GRAHAM: -- they are not going to let anybody cross that bridge until the winds have subsided because nobody wants, you know, the safety hazard there. But you should be on there right after that, because there is going to be a lot of down power lines. That it's not just going to be the fire department. They are going to need for you to be there as well.

MR. PUENTES: Yes, they allow us to do that. Yes, sir.

CHAIRMAN GRAHAM: Thank you.

COMMISSIONER BROWN: Thank you.

Commissioner Clark.

COMMISSIONER CLARK: Thank you, Madam Chair.

Thank you, Mr. Puentes, for your presentation. Just a couple of quick questions.

I know you -- you guys operate two very unique systems, one urban system and a rural system. When we look at your data, are your -- your capital costs, your hardening costs, are they spread evenly among your two systems? Have you focused in one area versus the other?

MR. PUENTES: No. We try to -- try to -- when we do budgeting and we meet with the other division, we try to address both areas. However, we have done some investments on where the needs are more critical, and that's what we try to look at. But we try to spend money as evenly as possible.

COMMISSIONER CLARK: And the same thing, kind of my question regarding your vegetation, your right-of-way trimming cycles. You have got a six-year cycle on laterals, I assume, and --

MR. PUENTES: Yes, sir.

COMMISSIONER CLARK: Do you apply the same principle to your rural customers as to the urban? It seems like you probably got higher, faster growth in the rural areas than you do the urban. Do you -- is it worth evaluating shorter trim cycles for each of the two divisions.

MR. PUENTES: Yes, we are looking -- we are looking -- you are right, Commissioner Clark.

One is more rural, and there is more trees on that area; therefore, we have more expenditures in tree trimming crews over there addressing all the vegetation management initiatives.

And as we look at that three-year and six-year lateral -- three-year feeder, six-year lateral -- we have also began trying to do, when you are trimming the feeders, the laterals are very close by, so trying to do those. And that's where we are trying to evaluate if it's -- if it's better to go to a four- or five-year cycle, where you do them all at once.

And we are -- and in the island, it's a little bit easier, because it's compact, and we don't have as much trees, so we have less crews over there.

COMMISSIONER CLARK: Thank you, sir.

MR. PUENTES: Thank you.

COMMISSIONER BROWN: Commissioners, any other questions?

Seeing none, thank you, Mr. Puentes.

This seems like a nice time to take our recess for lunch.

The time is 12:40. We will take an hour. We will be lack here at 1:45.

Thank you.

We are in recess.

(Lunch recess.)

(Transcript continues in sequence in Volume 2.)

CERTIFICATE OF REPORTER

STATE OF FLORIDA)
COUNTY OF LEON)

I, DEBRA KRICK, 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 11th day of May, 2018.

DEBRA R. KRICK
NOTARY PUBLIC
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