I. Meeting Packet

State of Florida
Public Service Commission
INTERNAL AFFAIRS AGENDA
Tuesday – August 7, 2018
Immediately Following Agenda Conference
Room 105 - Gerald L. Gunter Building

1. Presentations of Electric Utility Targeted Under Ground Programs

    a. Duke Energy Florida – Kenneth McCraw, P.E., Project Director, Targeted Undergrounding Program (Attachment 1)

    b. Florida Power and Light Company – Manny Miranda, Senior Vice President of Power Delivery (Attachment 2)

2. General Counsel's Report

3. Executive Director's Report

4. Other Matters

BB/aml

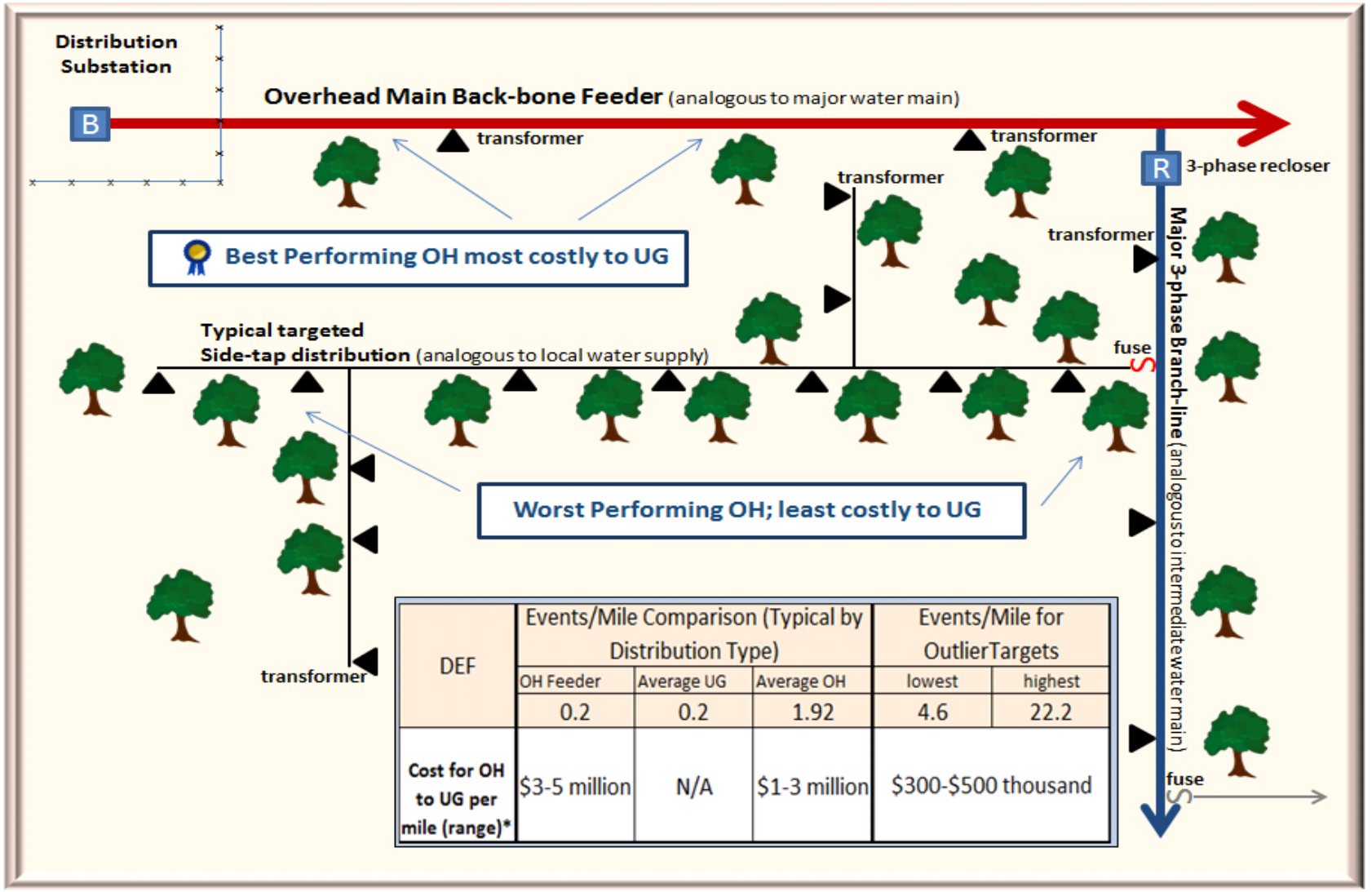
OUTSIDE PERSONS WISHING TO ADDRESS THE COMMISSION ON ANY OF THE AGENDAED ITEMS SHOULD CONTACT THE OFFICE OF THE EXECUTIVE DIRECTOR AT (850) 413-6463.

Attachment 1

Targeted Underground Program

DUKE ENERGY.

Events per Mile vs. # of Customers Prioritization



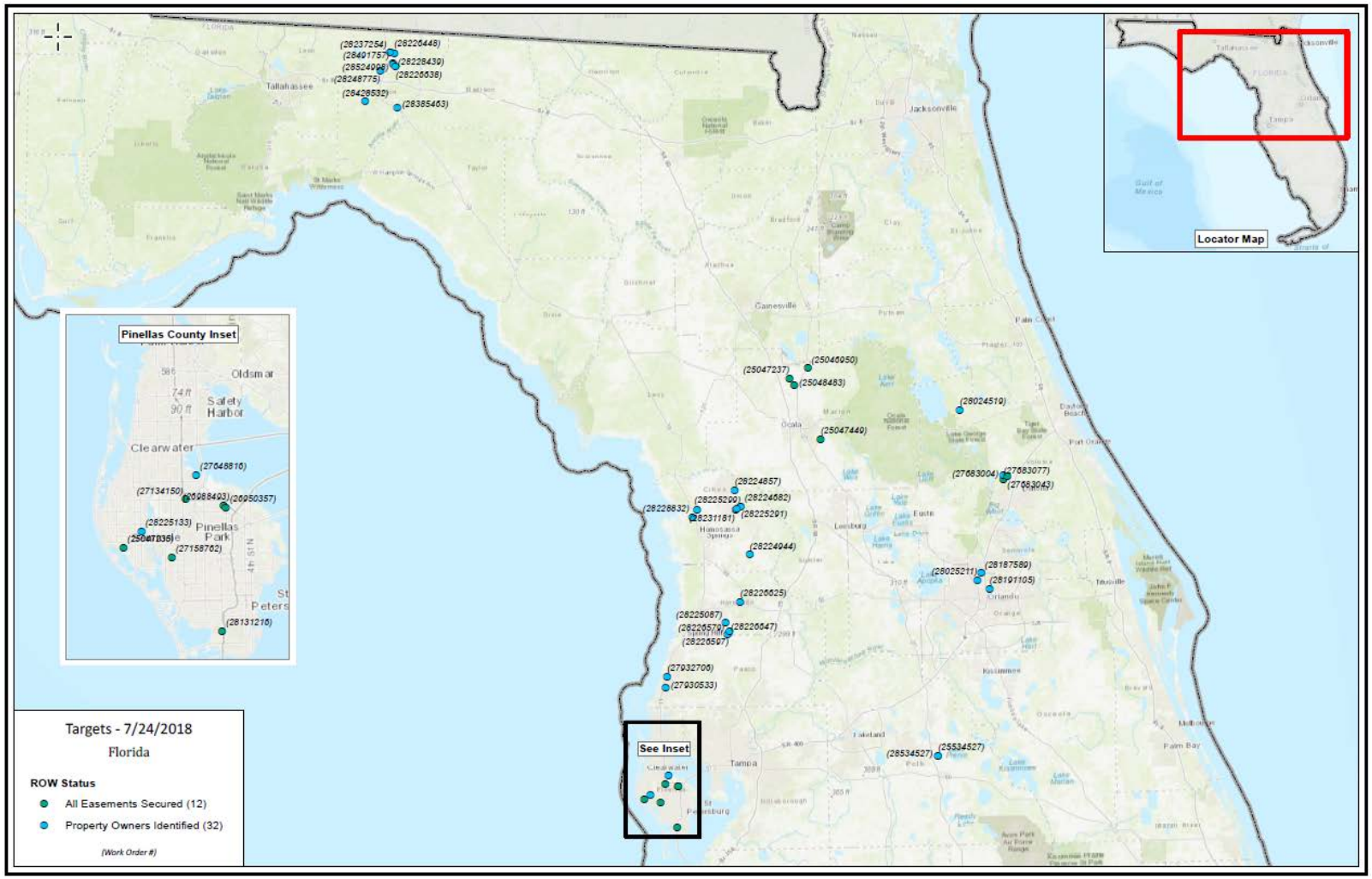
DEF	Events/Mile Comparison (Typical by Distribution Type)			Events/Mile for OutlierTargets	
	OH Feeder	Average UG	Average OH	lowest	highest
	0.2	0.2	1.92	4.6	22.2
Cost for OH to UG per mile (range)*	$3-5 million	N/A	$1-3 million	$300-$500 thousand	

- The worst performing overhead segments perform over 110X worse than the best performing segments
- These segments are the least cost to convert to underground ($300-500K versus up to $3-5M).
- Targeting worst performing side-taps strikes the sweet spot

Communication Process

Potential Targets Identified	Target Field Assessed	Easement Acquisition	Target Design Finalized	Construction	Customer Property Restoration
Evaluate community meetings and external considerations.	Mail WELCOME LETTER and BROCHURE prior to easement acquisition beginning. Use SORRY WE MISSED YOU DOOR HANGER as needed. Community meeting invitation and event (if determined).	Mail READY TO PROCEED LETTER and WHAT TO EXPECT FACTSHEET. Supply CONTACT CARDS to contractors with public engagement contact information.		OUTAGE DOOR HANGER and phone calls to proactively communicate outage timeline.	Use PROPERTY RESTORATION DOOR HANGER after construction complete. Request PROGRAM SURVEY feedback.

Florida Targets



Customer Feedback

"Very excited to have underground. The area floods and bad storms knock out power often"

"We can't wait for you to start because we are so excited."

"I don't feel comfortable having two easements on my property."

"I am looking forward to the project starting. We had a fire from the trees taking down the lines."

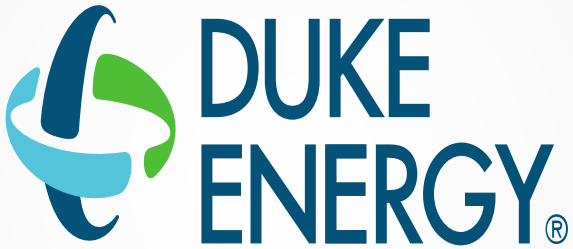
"I was thinking about doing the same thing –underground electrical service, at my own cost."

"I don't want to sign the easement unless the joint users come down."

10 Year Targeted Underground – Florida

County	TUG Miles	County	TUG Miles
Alachua	15	Leon	.5
Bay	.2	Levy	2
Citrus	34	Madison	3
Columbia	.6	Marion	69
Dixie	1	Orange	197
Franklin	3	Osceola	7
Gilchrist	4	Pasco	59
Gulf	3	Pinellas	443
Hamilton	5	Polk	44
Hardee	.61	Seminole	101
Hernando	17	Sumter	6
Highlands	28	Suwannee	2
Jefferson	10	Taylor	13
Lafayette	2	Volusia	80
Lake	41	Wakulla	9

Total TUG Miles ~1,200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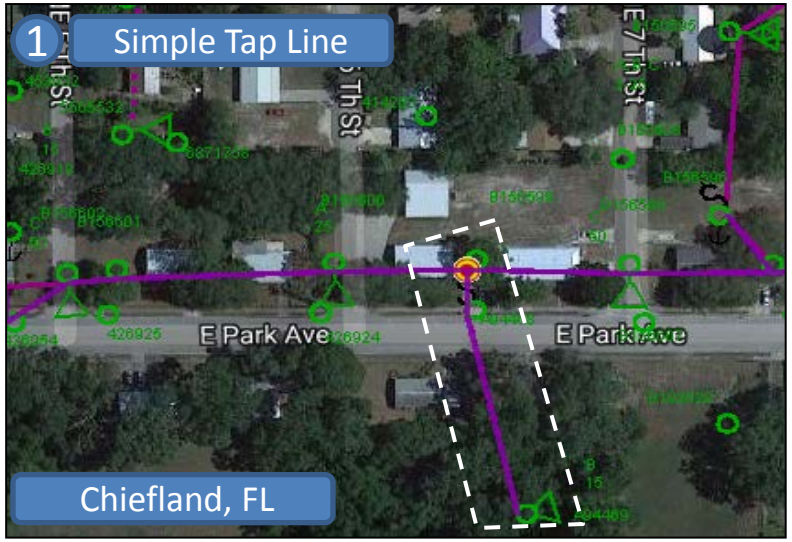
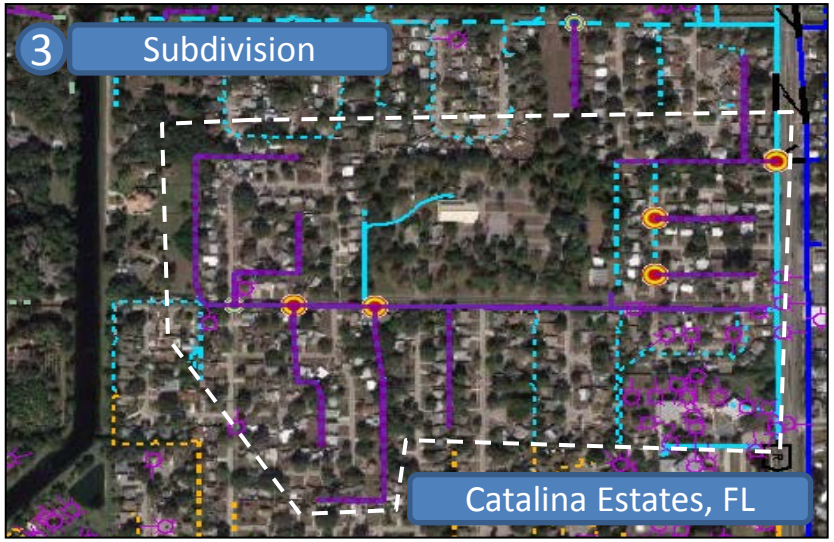
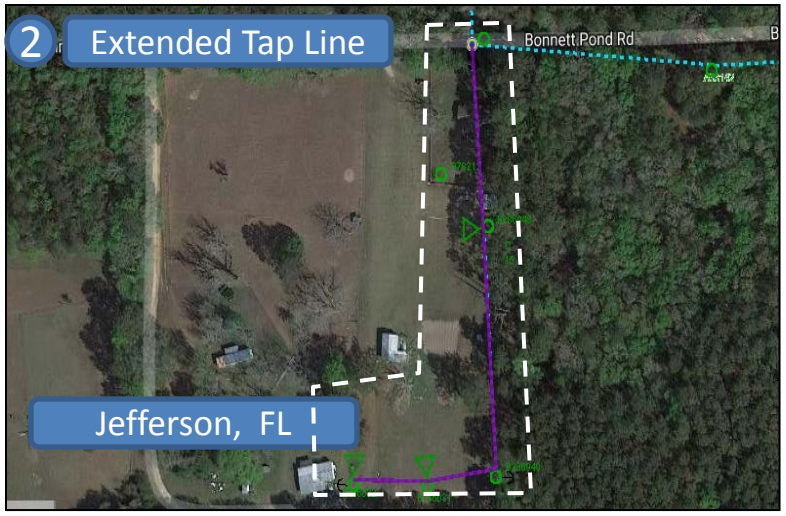
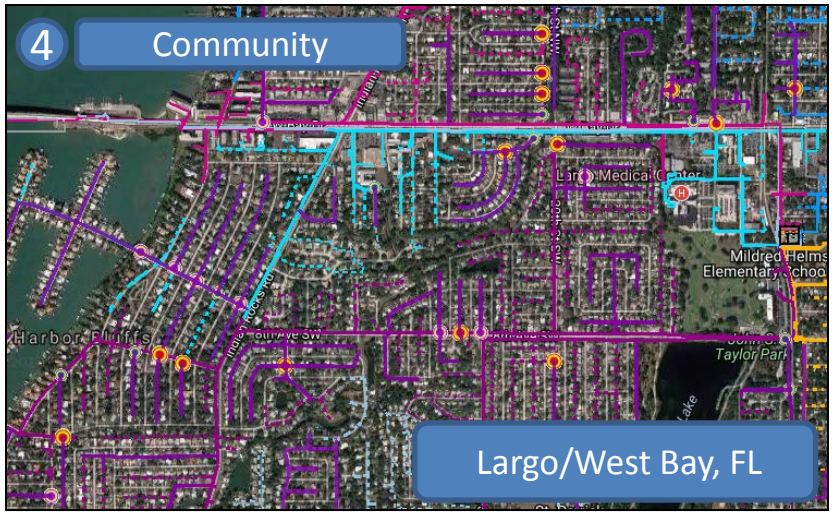
Appendix

Targeted Underground Work Types – Best Practices Input from Dominion









Starting with simpler scenarios (1's & 2's) in 2018 to hone our methods, processes and tools and to incorporate lessons learned to build the best customer experience possible before moving to the more complex neighborhood and community scenarios (3's & 4's).

Examples of Customer Communications Collateral – TUG Introduction Letter

DUKE ENERGY

Targeted Underground Program
14-274 | 299 1st Avenue N.
St. Petersburg, FL 33701

duke-energy.com/TUG

<Date TBD>

<Recipient's Full Name>
<Recipient's Address>
<City, State Zip>

Dear <First Name, Last Name>,

We're working hard to modernize the state's energy grid with investments to improve reliability, prevent outages and enhance service to customers. As part of this important initiative, we will soon begin work in your area called the Targeted Underground Program, which will affect all properties listed at the bottom of this letter.

The Targeted Underground Program identifies which sections of overhead lines have historically experienced the most outages and relocates them underground. Relocating these lines underground will:

- Improve the quality of your electric service
- Minimize service interruptions
- Increase safety in your area following an extreme weather event
- Make it possible to restore power more quickly following major storms

We have identified lines in your area that are part of the Targeted Underground Program. In order to fully evaluate these lines, we will need to access poles and wires in the area. A Duke Energy team member will work with you to answer questions and share project updates.

Every Duke Energy representative carries an identification badge, which should be visible at all times.

We have enclosed a brochure that provides more information about the project and what you can expect.

Please feel free to contact our Public Engagement Specialist directly with any immediate questions or concerns by email at **brian.york@duke-energy.com** or phone at **727.820.4511**.

We look forward to this opportunity to improve the quality of electric service in your area.

Sincerely,

Kenneth L. McCraw
Project Director, Targeted Underground Program

Brian York
Public Engagement Specialist, Targeted Underground Program

The following Florida properties will be impacted by the Targeted Underground Program:

Premise address

BUILDING A SMARTER ENERGY FUTURE™

Examples of Customer Communications Collateral – TUG Brochure

Program at a Glance

The Targeted Underground Program will help identify outage-prone overhead power lines to be relocated underground.

By relocating the power lines underground, we can:

- Reduce the number of power outages, improving the quality of your electric service
- Minimize service interruptions
- Increase safety in your area following an extreme weather event
- Restore power more quickly following major storms
- Eliminate frequent and labor-intensive tree and other vegetation trimming requirements needed for hard-to-access lines

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brian.yo

duke-en

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Targeted Underground Program

Improving the quality of electric service in your area.

What You Can Expect

Evaluation

A Duke Energy representative will be in your area to determine the best route for the proposed underground relocation. They will also look at the current meter base on your house to determine if any modifications are needed.

Obtain Easements

Easements give Duke Energy permission to install and maintain equipment along the proposed route. Duke Energy representatives will work with property owners to secure necessary easements along the planned underground route. If easements cannot be obtained, the work may be delayed or canceled.

Reviewing the Plan

You will have a chance to review the preliminary design and proposed equipment with our team so you understand the proposed underground plan.

Marking the Site

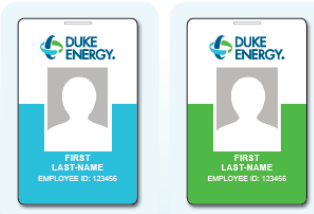
When it is time to relocate the lines underground, we will work with the utility locating service to mark and/or flag any public or privately owned pre-existing facilities (i.e., water, cable, septic). These markings ensure a safe installation. In most cases, work will begin within 48 hours after the locating service has completed the markings.

Line Relocation

When possible, Duke Energy will use low-impact drilling equipment to minimize property disruption. Once the final switch from overhead to underground takes place, there will be a short outage. We will communicate the outage date and time to you in advance so you can plan accordingly.

Restoring the Site

Once the work is complete, Duke Energy representatives will remove any overhead lines and/or other equipment. We will also lay seed and straw on the ground over the property where the lines are relocated.



Ask our representative to see an authorized Duke Energy identification badge.

Other Equipment Required

In order to provide underground service in your area, we may also need to install the following equipment:

Padmount Transformer

These transformers are in a locked steel cabinet mounted on a concrete pad. They are used with underground electric power distribution lines to supply power to a large building or many homes.

Pedestal

If necessary, a pedestal will be used to extend the underground system.

Meter Base Adapter

In order to use your current meter with your new underground lines, this adapter will need to be installed. Our team will determine which adapter will work best with your meter.

Attachment 2

Florida Power & Light Company

Storm Secure Underground Program Pilot

Manny Miranda

Senior Vice President, Power Delivery

August 7, 2018

Overview

- Performance of underground facilities during Hurricanes Matthew/Irma required FPL to re-examine its lateral hardening strategy

- FPL initiating 3-year (2018-2020) Storm Secure Underground Program Pilot to test assumptions/obtain other valuable learnings/experience

During Hurricanes Matthew and Irma, most outages caused by wind-blown debris, trees

Power is delivered by two different distribution power lines and poles

Feeder (main) power line

Lateral (neighborhood) power line

Overview of FPL's Distribution Feeders & Laterals

- **~3,300 feeders**
  - 80% hybrid; 16% underground; 4% overhead
  - ~40% are hardened/underground
    - 100% of feeders to be hardened or underground by 2024
  - ~95% of CIF/Community feeders hardened
  - Average length of feeder – 5.5 miles
  - Average number of customers/feeder – 1,500
- **~130,000 laterals**
  - 55% underground; 45% overhead
  - Average length of lateral – 0.4 miles
  - Average number of customers/lateral - 30

Lateral Reliability Performance - Overhead vs. Underground

Underground laterals performed **95%** better during Hurricane Matthew

Underground laterals performed **83%** better during Hurricane Irma

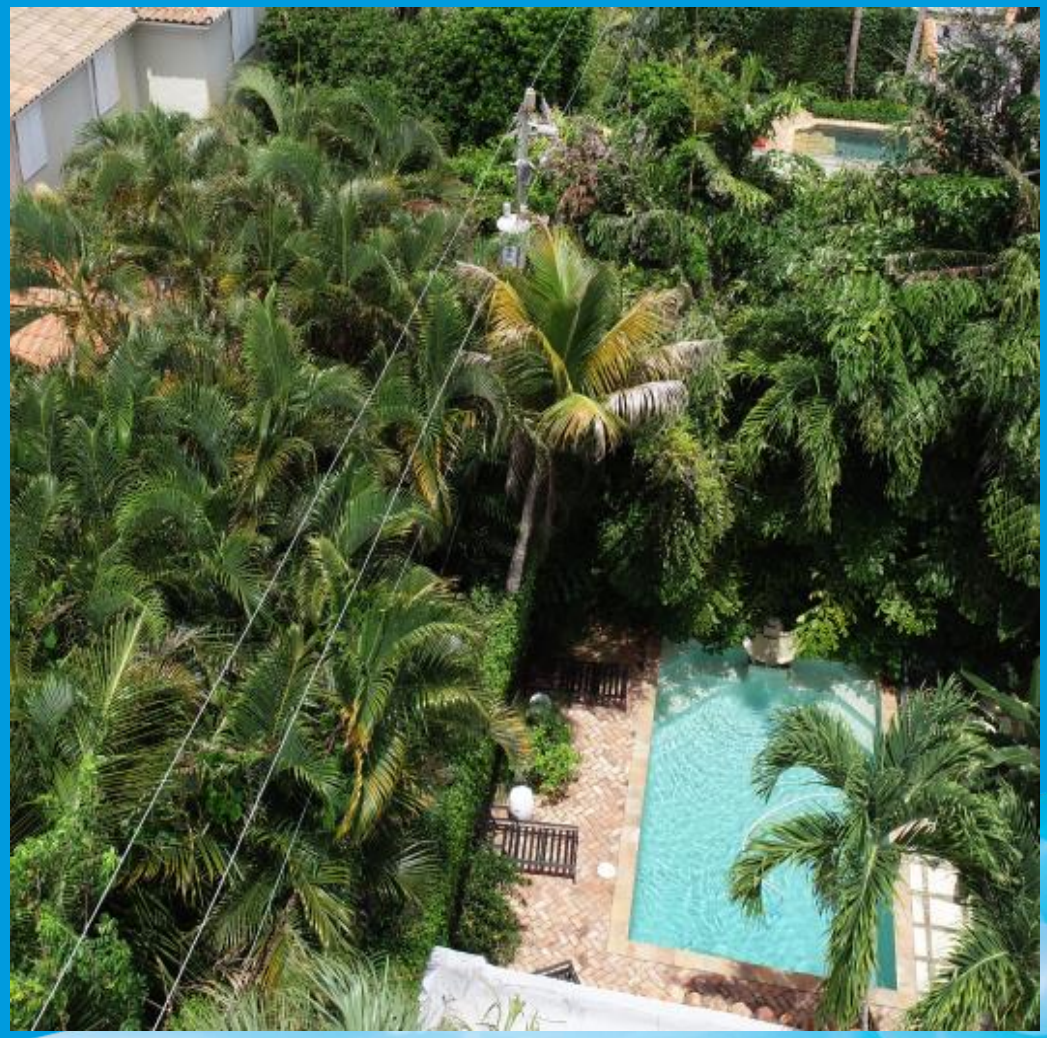
Underground laterals perform **50%** better day-to-day

Undergrounding laterals provides significant benefits

- **Improved storm resiliency**
- **Improved day-to-day reliability**
- **Underground lateral life-cycle costs are now competitive with overhead life-cycle costs**
  - Reduction in storm restoration costs
  - Reduction in daily operation and maintenance expenses
  - Higher initial capital investment

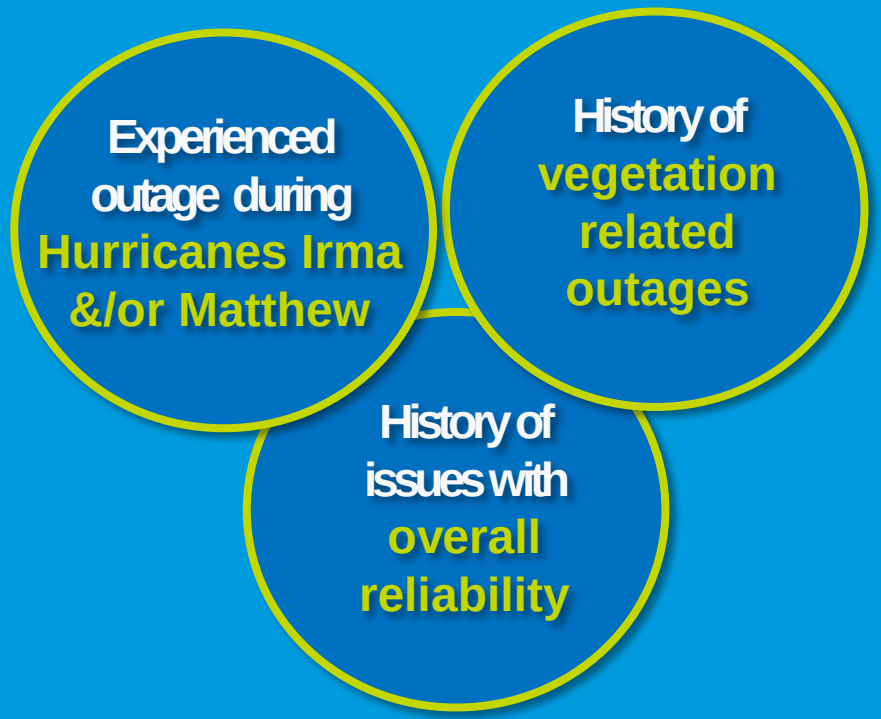
Overview – FPL's Storm Secure Underground Pilot Program

- **3-year $100 MM pilot (2018-2020)**
- **Key goals**
  - Test cost assumptions
  - Test new engineering philosophy
  - Better understand customer impacts/sentiment
  - Identify barriers, such as:
    - Easements
    - Transformer locations
    - Attaching entities issues
- **Projects spread throughout FPL's system**
- **2018 projects are underway**
  - Communications initiated with ~1,500 customers
  - Preliminary design/easement acquisitions in progress
  - Construction expected to begin September 2018



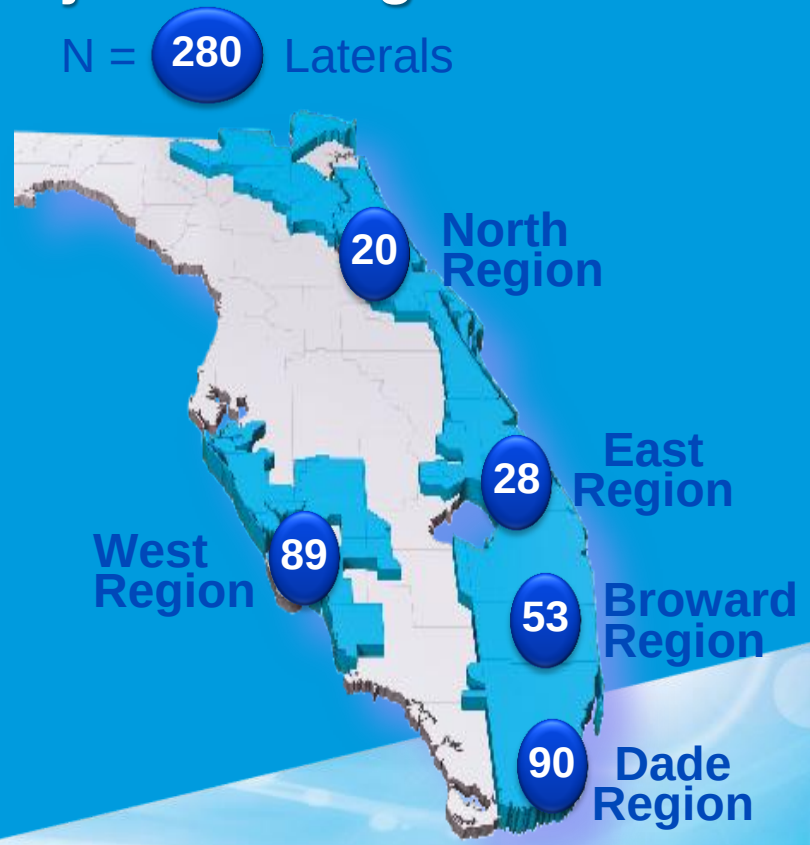
Overview – FPL's Storm Secure Underground Program Pilot

Pilot Selection Criteria



Note: Projects initially selected may be de-selected as a result of further evaluation (e.g., engineering feasibility, located in area susceptible to storm surge; customer issues)

- **3-year $100 MM pilot from 2018-2020**
  - 25,000 customers, 158 miles, 280 laterals
- **Projects throughout service territory**

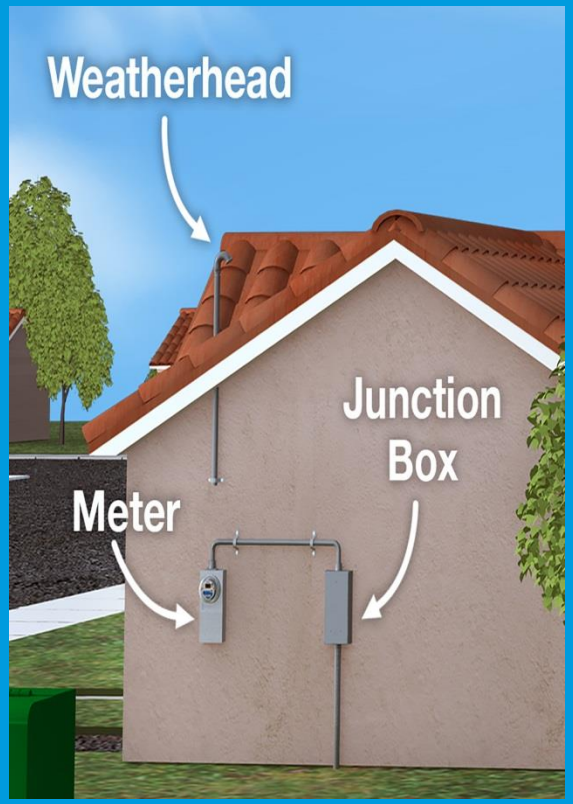


Overview – FPL's Storm Secure Underground Program Pilot

Before construction

After construction

Meter base adaptors are being used to limit customer impact and liability



Horizontal Installation

Vertical Installation

- **Installing a meter base adaptor minimizes impact on customer owned equipment**
- **If a meter enclosure is damaged during conversion, we will fix or replace it**

Actively Communicating With Customers and Municipalities

- **Dedicated regional customer outreach specialists**
  - » Serve as customer's main point of contact throughout project
  - » Planned communications at each of 6 stages:

- **External Affairs team supporting communication efforts with outreach to local governments/municipalities**

FPL®

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

Note: The records reflect that no outside persons addressed the Commission at this Internal Affairs meeting.

III. Supplemental Materials for Internal Affairs

Note: The records reflect that there were no supplemental materials provided to the Commission during this Internal Affairs meeting.

IV. Transcript

BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

PROCEEDINGS:	INTERNAL AFFAIRS
COMMISSIONERS PARTICIPATING:	CHAIRMAN ART GRAHAM COMMISSIONER JULIE I. BROWN COMMISSIONER DONALD J. POLMANN COMMISSIONER GARY F. CLARK COMMISSIONER ANDREW GILES FAY
DATE:	Tuesday, August 7, 2018
TIME:	Commenced: 11:50 a.m. Concluded: 12:19 a.m.
PLACE:	Gerald L. Gunter Building Room 105 2540 Shumard Oak Boulevard Tallahassee, Florida
REPORTED BY:	ANDREA KOMARIDIS Court Reporter and Notary Public in and for the State of Florida at Large

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

P R O C E E D I N G S

CHAIRMAN GRAHAM: Okay. Let the record show it is Tuesday, August 7th. This is our internal affairs meeting. And it's about 11:51. We have called this meeting to order.

First thing on our agenda is the presentations of undergrounding. I think Duke is up first.

MR. McCRAW: Good morning. Thank you all very much for taking time to -- to hear about our targeted underground program at Duke Energy.

We'll go ahead and go to the next slide. We'll just go ahead and jump right into this. So, our program -- am I controlling this?

There we go. Perfect.

COMMISSIONER BROWN: Hello.

MR. McCRAW: Hey.

MS. NETTLES: You can. This is just forward and back.

MR. McCRAW: Perfect. Thank you.

MS. NETTLES: Okay? Thank you.

MR. McCRAW: All right. Very good.

So, what I wanted to start with is this is a depiction of the distribution system. The red line is a -- our backbone, part of our system, comes out of the substation. The reliability on -- on that

part of the system is really pretty good. It's comparable to our underground system.

The blue line there with the "R" from -- for a recloser, or some kind of section-line device, is our intermediate part of our system. And it also performs fairly-reliably on a day-to-day basis.

What this program is really targeting is parts of our system -- if you look at -- the red "S" is a fuse, what we call a tap line. So, our sys- -- our program is really targeting those parts of our systems or those tap lines that are really performing very poorly, from a reliability standpoint.

So, we used a lot of data analytics. We look at ten years of history for normal day-to-day events and calculate how are they performing. And that determines whether or not this program may make sense for them to do.

Basically, we're looking for areas that are highly vegetated, where trees -- primarily trees outside of the right-of-way are causing a lot of outage issues, for this program. By focusing here, we feel like it's -- if you look at the data, we're targeting areas that are performing, you know, tw- -- twice as bad as our overhead average

underground performance.

So, our average overhead performs at 1.9 outage events per mile on an annual basis. The areas of our system that we're targeting in this program are performing at -- the best of the worst, so to speak, is at 4.6 outage events per mile, and the worst is 20 outage events per mile. So, you can see these are significantly worse-performing areas of our system. That's why we're focusing on those, from a day-to-day aspect.

Certainly, with this program, while we're basing it on more of a reliability and day to day, there are benefits for major events like Hurricane Irma and Matthew.

These are our weakest part of our system, which is evidenced by the -- the outages we're experiencing on normal days. So, by addressing these areas during our program, we would, in effect, also reduce what we would expect to happen during major events because these are usually the first to go out and the last to come on, because of the situation there. All right.

CHAIRMAN GRAHAM: Question for you.

MR. McCRAW: Yes.

COMMISSIONER BROWN: Thank you, Mr. Chairman.

So, are you in the middle of this right now or is this to be planned?

MR. McCRAW: So, we have actually started. We actually started construction two weeks ago on our first project here in Florida.

COMMISSIONER BROWN: Where is it on this map?

MR. McCRAW: On the --

COMMISSIONER BROWN: Or the depiction?

MR. McCRAW: In the depiction, it would be a tap line. So, it would be one of these small fuses. And it probably would be really one of these small areas, if you look at the map, with only two transformers. That would be probably an example.

So, what we started with, for our program, is we started with our simpler, shorter taps; small amount of customers to get our processes to test and make sure we're doing this effectively because this is a high-customer-engagement, high-customer-touch program.

COMMISSIONER BROWN: And I noticed that in your materials. How many customers would typically be affected on this first project?

MR. McCRAW: So, on this first project, there were two customers affected. Some of these early

ones, we've had as many as a dozen and as few as one.

COMMISSIONER BROWN: Were they receptive? Obviously --

MR. McCRAW: So, for the most part, they are very receptive. We do require easements to do this work because we're going to be putting underground infrastructure and obviously removing our overhead infrastructure. The easements has been one of our sticking points at times, but --

COMMISSIONER BROWN: Easements with the private-property owners?

MR. McCRAW: Yes.

COMMISSIONER BROWN: Do you have to pay --

MR. McCRAW: We do not -- well, we have a nominal fee of a dollar because of jurisdiction, but -- but we do not pay for the easements.

COMMISSIONER BROWN: Thank you.

MR. McCRAW: Yes.

CHAIRMAN GRAHAM: Commissioner Clark.

COMMISSIONER CLARK: So -- so, I may have misunderstood that. Your -- your -- your conversions so far have targeted taps that had one customer on them?

MR. McCRAW: We have had one that had one

customer. And the second one we had had, I think, about five customers on it.

COMMISSIONER CLARK: And so, if you did your calculation and you -- you were using 1.9 outage events per mile compared to 4.6 -- do you have more customer-specific data on your outages from overhead versus the underground, like CAIDI scores or something like that?

MR. McCRAW: I don't have those in front of me, but we do have that analysis. I just don't -- I can't quote it off the top of my head.

COMMISSIONER CLARK: What is your -- do you know the current density calculation differential between overhead and your underground customers?

MR. McCRAW: I don't know that specifically, but this is really not a customer-count program. We're strictly going on how many outage events are we having to respond to because, for us, whether it's a one customer there or a hundred customers there, we're having to roll a truck to respond to that outage.

So, this program is really about event elimination to -- eliminating or reducing the number of events we're having on these segments of our system; not really looking at how many

customers are necessarily impacted by the program.

COMMISSIONER CLARK: Is there potential that some of the events that are occurring can be maybe part of the responsibility of the consumer as well? If you have some long overhead taps through -- especially, if I were looking at a long overhead tap that was through a -- to one customer, there might be an assumption that that one customer owned some of the -- some of the problems in terms of trees outside of the right-of-way.

MR. McCRAW: Perhaps, but we've been unsuccessful, historically, of addressing those issues as far as vegetation, especially anything outside of the right-of-way, from our -- from our perspective. And at the end of the day, we're having to deal with those issues and respond accordingly to restore power.

COMMISSIONER BROWN: Time period for each project, for conversions -- what do you estimate? I mean, everything is different, obviously, based on the --

MR. McCRAW: It -- it will -- yeah, everything is different as far as the size and the scale and scope of the projects. So, the first one, we -- from a -- just from a pure construction standpoint,

we started July 23rd and we finished construction last week. So, about a week and a half. That was a shorter-type project. We've not completed all the property restoration. And then we do a survey at the end.

But it's taking us -- we started initial communications in March. So, it's -- took us that long just to get the first project ready to do construction. So, it's a pretty lengthy process to go through.

COMMISSIONER BROWN: That's what I would think.

MR. McCRAW: Yeah.

COMMISSIONER BROWN: Thank you.

MR. McCRAW: Okay. So, you guys are really jumping into some of our process that we're doing here, as far as our program. Like I said, it's high customer engagement. I have a dedicated team that we've really designed to support this program that didn't exist prior to this program to focus on the customer-engagement activities.

We start with our target identification once we get the list. This year, we didn't prioritize based on the highest number of events per mile, but going forward, we will be. This year, we picked

simpler targets just to get our processes down, but going forward, we'll pick the highest outage events per mile. And that will be our starting point.

We do kind of a desktop assessment, then a field assessment to validate. This program really is the right program to address the problem. Really, if it's not in -- if it's in an open pasture, this may not be the right program. There may be some other programs that we have at Duke Energy that can solve those issues.

Assuming it still meets those needs, then we'll send a welcome letter to our customers, saying, hey, you're part of the target underground program. And more information will follow with the welcome packet, with a bunch of information of what to expect.

At that point, we'll begin the right-of-way easement-acquisition process. Once we get through all of that, for a target, assuming everybody agrees that they want to participate, then we will move that into our final design process to make sure everything is buttoned up there, and then move it into construction.

At that point, we'll send another communication saying, we're now in construction.

Here is what to expect. And then we will periodically touch base on status to keep the customer updated on what's going to happen.

Then we'll close it out, do our property restoration. And then we'll do a survey at the end to kind of ensure that we've managed that whole process effectively. So, at a high level, that's our engagement and our process as we move forward.

MR. BAEZ: Question.

MR. McCRAW: Yes.

MR. BAEZ: Sorry.

CHAIRMAN GRAHAM: Sure.

MR. BAEZ: The customer engagement, if you have --

CHAIRMAN GRAHAM: Microphone.

MR. BAEZ: Sorry. If you have -- if you've got a holdout, you just move on to the next -- next project or --

MR. McCRAW: If we cannot redesign around it, yes, we will move on to the next project. So, we'll do everything we can to work try to around it. We've had a couple of issues -- not in Florida specifically, but in other jurisdictions -- where we've had to cancel some projects as a result of that, yes.

CHAIRMAN GRAHAM: We're not concerned with those.

MR. McCRAW: Do what? Yeah.

CHAIRMAN GRAHAM: The ones in Florida --

MR. McCRAW: They're pretty excited, in general, yes.

This slide just shows generally where we're going to be at in 2018. And it's -- you know, what you can see is we're trying to pick various areas across the state just to get some experience on what the different -- certain areas are like, different customer bases as well as different terrain and those kinds of thing. So, these were areas just to help us get learning and -- and to make sure we get our feet wet across Florida.

Some general customer feedback that we've gotten just in our initial engagement activities, as we've been out there, talking to customers about the program and getting easements -- generally, everybody is very excited about this program. They all want it, especially after the hurricanes that have happened in the last two years. So, they're very supportive of the program.

Like I said, one of the -- the opportunities we continue to work through is our easements and

just getting people to understand why we need them and what they're really about.

And then the second thing is, because, for us, this is a reliability program, if there's a joint user on that pole -- so, AT&T or Charter Communications or somebody like that -- that pole may not go away.

If they choose to stay on the pole line, then that pole may stay, even though we remove our wires and infrastructure because we're addressing from reliability; we're not addressing from communications.

Yes.

CHAIRMAN GRAHAM: Question for you. Are you -- are we reaching out and -- and talking to those other -- AT&T or other utilities as we're going through this process?

MR. McCRAW: Yes.

CHAIRMAN GRAHAM: Do you want to keep the line up there; do you want to take it down?

MR. McCRAW: Yes. We are actively talking with them and have been for a while, to -- to talk to that process. And in some areas, they're very -- they're wanting to do some -- some joint boring opportunities to come off.

And in some areas -- in particular, AT&T -- where they've over-latched their fiber onto the pole, where their wire was or copper was, they're not real interested because they've just spent a huge expense. So, it depends on the situation in the area.

But we are trying to work proactively, especially as we expand the program. And if they look at areas where they may be looking to add fiber, this may be a great partnership opportunity.

Okay. And this last slide here really just talks about -- this is preliminarily, if we were to do the full ten years -- currently, we're -- we're -- we've scoped this out to be about a ten-year-type program -- where we would be, spread out across all of the counties.

What I'd say -- this is a preliminary because ev- -- we will -- as I said, we'll go through the process of reviewing and updating and validating the targets or the correct targets to do.

In addition, we'll do a data refresh about every three years or so. So, we plan to do a data refresh next year. And so, some targets may come off the list; some may get added to the list. Depends on -- you know, we're looking at a ten-year

history. So, we're trying to make sure we don't have anomalies or statistical anomalies by looking at a longer period of time to pick our targets.

So, I had some appendix slides, but unless you've got some additional questions -- really the one appendix slide just kind of shows -- the first one shows how we're categorizing our projects.

So, really, for this year, basically everything is either a one or a two, very simple, easy to learn and get our processes down. We'll be moving into bigger projects in '19 and '20.

Okay. Any other questions?

CHAIRMAN GRAHAM: Any questions?

MR. McCRAW: Thank you all very much for your time.

CHAIRMAN GRAHAM: Yeah.

Florida Power & Light, come on down.

COMMISSIONER BROWN: Hi.

MR. MIRANDA: Hi. Good afternoon, Commissioners. Thank you for the opportunity to share our story. I'm Manny Miranda, vice president of power delivery. It's good to see you again. It's good to be here and not be fighting a storm. So, it's all good news from there.

CHAIRMAN GRAHAM: Amen.

COMMISSIONER BROWN: That's true.

MR. MIRANDA: So, let me start with this summary. Following the -- the storms, our underground facilities performed really well during Matthew and Irma. And as a result of some of the impacts that we had found in those storms, we had to kind of revisit our hardening approach to our laterals.

So, as a result of that, we're proposing a three-year pilot to really underground some of the target laterals in our service territory to really validate some of our assumptions that we're looking at and, also, to try to get some learnings out of these undergrounding efforts.

The slide may look very familiar to you. You may have seen this during the generic docket as well as during my testimony during Hurricane Matthew. These pictures are really representative of the type of damage that we saw, especially on our lateral lines. And most of these were trees that fell outside of our right-of-way, outside of our trim zone.

As Duke shared with you, we really have two types of facilities that we deal with at Florida Power & Light. The one on the left, the feeder

lines -- these are our main power lines. These are the ones that typically have the larger poles. They're referred to as the main lines; typically run along right-of-ways. So, they're the ones that serve the majority of our customers.

The picture on the right -- and you can see some of the tree trimming that goes on -- is a lateral. The lateral is a tap line that comes off the feeder line. This is where the majority of the customers kind of reside on, if you will.

Typically, these are what we call neighborhood lines. They're in backyards, older lines, older communities. And these are where we really experience a significant amount of outages during our storms.

So, I wanted to share with you a few key statistics on some of the type of facilities that we have at Florida Power & Light. You've seen our feeders. You know, we have about 3,300 feeders at Florida Power & Light.

A majority of these are a hybrid. And what I mean by hybrid -- meaning a portion of them have overhead, a portion of it has underground. 60 percent are our circuits are pure underground, and then a -- 4 percent are pure overhead.

All of you know we're really moving forward with our hardening initiatives. Over 40 percent of our feeders are either hardened or underground at this point. And our goal is, by 2024, to have our main lines, our feeders, either hardened or underground.

CHAIRMAN GRAHAM: Yes.

COMMISSIONER BROWN: Manny, what -- what makes FPL determined to put the feeder underground versus hardened? Obviously, you're hardening.

MR. MIRANDA: Typically, there's only portions of feeders we will underground; typically, again, if it's exposed to a lot of vegetation and/or if we technically cannot achieve the hardening criteria with the overhead system.

So, sometimes we have to bury a certain portion because we can't set a bigger pole or we can't set the quantity of poles that are needed to bring it up to a certain strength. So, in those cases, because it's technically not feasible, we will dip it at that point.

COMMISSIONER BROWN: And currently, where are you guys on the hardened side of the feeders? How many -- what's your percentage that are hardened?

MR. MIRANDA: So, about 13 percent are

underground and the other 27 percent are --

COMMISSIONER BROWN: Okay.

MR. MIRANDA: So, 40 percent total are either hardened and/or underground at this point.

COMMISSIONER BROWN: By 2024, which percentage is going to be underground, of the feeders?

MR. MIRANDA: I -- we probably will not harden -- or complete feeder underground. The portions of feeders --

COMMISSIONER BROWN: Portions?

MR. MIRANDA: They will be hybrids during that time frame.

COMMISSIONER BROWN: Okay.

MR. MIRANDA: But they will all meet the extreme wind load and criteria that we have for all feeders at that point.

COMMISSIONER BROWN: Thank you.

CHAIRMAN GRAHAM: Commissioner Clark.

COMMISSIONER CLARK: Manny, you mentioned that your feeders performed better than the laterals during the storm. Could you tell us what the right-of-way differences are, the right-of-way requirements are, between the two?

MR. MIRANDA: Typically, Commissioner, the majority are in right-of-way only because we either

have to build, you know, what we call three-phase lines, three conductors. And that's kind of our main thoroughfare.

So, if you think of it, that's kind of like your expressway. The tap lines are typically in -- especially these older lines are in our customers' backyards. So, they typically pull off into the neighborhood lines.

So, the majority of our laterals, today -- you know, the overhead laterals are in rear of construction right now.

COMMISSIONER CLARK: Do you have specific req- -- easement requirements in terms of footage, the amount of footage for a lateral, versus one that's a three-phase feeder?

MR. MIRANDA: It depends, yes. Short answer is yes. We have -- you know, if it's three-phase, obviously, you need more span to be able to operate that. Typically, in the neighborhood line that goes in the backyard, it's a single-phase line, one wire, and we ask for five feet on each side of it.

COMMISSIONER CLARK: So, you have a ten-foot right-of-way versus --

MR. MIRANDA: Versus -- could be --

COMMISSIONER CLARK: -- 30?

MR. MIRANDA: -- 15, 20-foot on the feeder.

COMMISSIONER CLARK: And -- and would that account for some of the performance differences between the -- the two types of lines?

MR. MIRANDA: It would, but the majority of our feeders, again, are in right-of-way. So, we push them towards those areas where we don't have a lot of vegetation. That's -- we're trying to avoid some of that major vegetation associated with it.

And then, feeders, about 5.5 miles -- lots of customers. So, you need the feeders in order to serve the laterals, of course. So, you -- so, we have about 1500 customers per feeder.

The laterals -- and this is really important for us. We have about 130,000 of these tap lines. 55 percent are already underground. So, really -- that really was triggered from all the new construction over the years, right.

So, since the 1980s, all new subdivisions have really been building their facilities underground. And 45 percent are overhead, short distances, and an average about 30 customers per lateral.

Commiss- -- one of the Commissioners asked the question on the density. Typically, an overhead lateral has about 30 -- 30 -- 30 customers.

Underground laterals have a little bit more density; about 35, 36 customers per mile.

And you've seen some of these stats. The underground laterals during Matthew and Irma performed extremely well, but the other thing, too, that we see on a daily basis -- because Florida is exposed to so much, you know, severe weather, afternoon lightning storms, day to day, our underground laterals also perform significantly better, about 50-percent better, in daily reliability.

CHAIRMAN GRAHAM: Question for you.

MR. MIRANDA: Yes.

CHAIRMAN GRAHAM: You said the underground laterals --

COMMISSIONER BROWN: Microphone.

(Laughter.)

CHAIRMAN GRAHAM: That -- that 5 percent and that 17 percent over here -- you're not taking into account where a transformer on the end, one way or the other, failed; it's just actually the line went down?

MR. MIRANDA: The lateral -- the lateral fuse, Commissioner, actually went out. So, if you had a transformer or a single, individual service drop,

that's not included in this metric.

CHAIRMAN GRAHAM: Okay. Thank you.

MR. MIRANDA: So, our underground pilot that we're looking to move forward is -- and we know that the underground really, really did well during storms, day-to-day reliability.

But the other big thing that we're starting to see is that underground construction costs are starting to become a little bit more competitive with the overhead; especially when you start looking at it from a life-cycle perspective because you start looking at, you know, the hurricane costs. You look at daily operations and maintenance costs, as well as just some of the programs we have to do on our overhead.

So, for example, you wouldn't have to do vegetation trimming. We wouldn't have to do pole inspections, right. So, some of these things are now starting to offset. And it's starting to make the -- the life-cycle costs comparable as you start incorporating some of the storm costs into these analyses. So, that's why we're proposing this pilot at this point.

So, what is our pilot. So, what we're proposing is a -- not proposing -- we are moving

forward with it. It's a three-year pilot. It's about approximately $100 million of investments that we will be making.

Here is what we're trying to figure out: What -- are our cost assumptions valid, right. We're looking at some new engineering approaches as well, trying to understand, is there a different way to design some of these underground facilities.

And you know, as Duke shared, looking at the customer impact, easements are going to be a big deal. And also, the transformer locations -- you know, right now, all of these facilities are in customers' backyards. Ideally, so that we don't increase our operation and maintenance costs, we're going to want to move the transformers to the front-lot distribution. That's not going to be easy, right.

We're prepared to keep it in the backyard, but our goal is to try to move it towards the front so that we can mitigate future operational costs, both for us and for them, because if we do have an outage in the underground, we don't want to be stomping through their backyard. So, we want to be trying to get some of those facilities accessible.

So far, we're getting some positive

receptivity, but we know there will be some customers that will want to keep the facilities in -- in their backyards.

CHAIRMAN GRAHAM: You mean that there's peop- -- there's people that don't like that in their front yard (indicating)?

(Laughter.)

MR. MIRANDA: Commissioner, I love that, though. They don't want that or the poles or some of the other stuff we've put on there.

And as I shared, these projects are going to be spread throughout our service territory. We've begun communications with about 1500 customers. And we'll -- you know, we're already in negotiations with them, and we hope to start construction in September.

So, our pilot selection of the laterals we're going to do -- we're going to do about 280 laterals. So, you can see, they're spread throughout our entire service territory. And the reason we did that is we wanted to make sure we had good geographic, you know, view of what it's going to take. You know, we have different types of soils that we'll be dealing with, as well as different customer bases.

So, we have a good, you know, cross-representation of our service territory. We -- we select our criteria based on, one, their reliability, if they've had historical lateral outages; two, were they prone to vegetation outages; and of course, were they impacted during Irma and/or Matthew. So, that's how we selected our -- our pilot locations.

COMMISSIONER BROWN: What about if they're not hardened, already? If the laterals aren't hardened, currently hardened, would you -- is that a consideration?

MR. MIRANDA: Yeah, none of these feeders we're selecting, Commissioner, are hardened at this point. We have -- we have not moved into any -- if you re- -- well, when I came during FPL's rate case, we were looking at hardening our laterals, but after Matthew and Irma, there -- we sat down and looked for many, many different ways of trying to harden the laterals. And we just could not figure out a way, technically, to achieve it without sticking a hundred-foot pole up in the air in somebody's backyard. And you know, that -- that would not have been received well by -- by our customers.

And this is something -- you know, a representation of what we're hoping to accomplish. The item -- the -- before construction -- that's a typical rear-lot construction of a house. You can see it's a tran- -- an overhead transformer with a service drop into the house that serves the meter.

On the right, I've given you two -- two potential outcomes. The top one, after construction, is the optimal. If we can get the other utilities such as, you know, the telephone companies and the cable companies to relocate, then that's the way that the -- the representation will look, in the top right. If they can't -- as Duke shared, you know, the poles will stay behind with the facilities located in our customers' backyards.

Now, this, to me, Commissioners, was the game-changer and why this project can go forward. Historically, when we have been doing customer conversions, you know, with cities and municipalities, you know, one of the big obstacles along the way is the meter can because, typically, you have an overhead service drop that comes in. You have a pipe that goes up overhead, and now you have to convert it to underground.

In the past, we would require those customers

to change out that meter can to convert. So, it would go down so we can tap it up. Many times, when that happened, the local municipalities would require that the home be brought to code. And that really added significant cost to the customers.

This meter adapter was identified as a best practice. And we're going to be utilizing it. So, effectively, the customer does not have to change out their meter can. What we'll do is we'll intercept the overhead pipe, put a -- effectively, a junction box, and connect to the existing meter can without requiring the customer to touch that meter can.

So, that is a really big process change. And I think this is what really enables this project to go forward and make it cost-effective.

COMMISSIONER FAY: Question. So, I guess, during this process, essentially you -- if there's -- if there's an issue with the conversion, the utility is absorbing whatever that issue is to -- to remedy it? Is that --

MR. MIRANDA: Yes. So, for the pilot purposes, Commissioner, the only thing we're going to be doing with the meter can is literally just pulling the meter can out to deenergize it and

break into the pipe on -- above it and do an adaption [sic].

If we damage the meter can for any reason while we're pulling the meter out, we will repair it during the pilot.

COMMISSIONER FAY: And that's probably extremely rare. I --

MR. MIRANDA: It should be -- it should be the exception. You know, we had a lot of experience when we did the smart-meter conversion, so we have a lot of experience in changing out those meters. but if it does happen, we'll be prepared to have the licensed electrician go through any repairs that are required.

COMMISSIONER FAY: Great.

COMMISSIONER BROWN: And it will actually attach to the physical structure that's located on the property, like you have in the picture?

MR. MIRANDA: Yes, just like that picture.

COMMISSIONER BROWN: So, your only -- the pilot project is only for laterals, not for feeders.

MR. MIRANDA: Just for laterals.

COMMISSIONER BROWN: Okay.

MR. MIRANDA: That's correct. That -- and

that's -- 85 percent of our man-hours associated with Irma, Commissioner, were related to these tap lines. That's where our -- that's what really, you know, resulted in extended restoration time periods for us.

COMMISSIONER BROWN: Thank you.

MR. MIRANDA: We get our feeders up very quickly, especially the hardened ones. You know, they have very little damage to them. You know, they go out -- you know, electricity -- anything touches that line, it shorts out, but as far as physical damage we saw in hardened feeders, it was very minor, and we can repair it very quickly.

COMMISSIONER BROWN: Thank you.

MR. MIRANDA: And like Duke, we've already began to reach out to customers. You know, we have established our process of selecting the project. You know, this is a -- this is new for us because these customers don't know it's coming. So, we're literally knocking on doors and saying, congratulations, we're about to convert.

So, they're very excited, you know, and very, very cooperative. And I think they're going to be thrilled with the end result once we're completed with -- with these underground projects.

CHAIRMAN GRAHAM: That's good. That's awesome.

MR. MIRANDA: And that's --

COMMISSIONER BROWN: Yeah.

MR. MIRANDA: -- my presentation.

COMMISSIONER BROWN: Not my backyard.

(Laughter.)

CHAIRMAN GRAHAM: Questions? Any questions, anyone?

Thank you for your presentation.

MR. MIRANDA: Thank you, Commissioners. Have a great day.

CHAIRMAN GRAHAM: Staff, thank you very -- staff, thank you very much for bringing that before us. I know I just mentioned it, I think, just last meeting, so thanks for getting on that.

General counsel's report?

MR. HETRICK: Yes, Commissioner -- oh, on -- got it. Real quick, Mr. Chairman, I would like to introduce to Johana Nieves. If you could, stand up, Johana. She's our newest attorney. She's been here with us a week. She solidified her pos- -- she's from Florida State -- recent graduate of Florida State University.

She's got an interesting clerkship background

with a variety of law firms. And ask her about her experience with the Colombian Army International Helicopter Program.

She solidified her position today with me by bringing Lucky Goat coffee, so --

(Laughter.)

MR. HETRICK: So, welcome, Johana.

MS. NIEVES: Thank you.

CHAIRMAN GRAHAM: Welcome.

MR. HETRICK: And that's it, Mr. -- Mr. Chair.

CHAIRMAN GRAHAM: Okay. Executive -- executive director report.

MR. BAEZ: Thank you, Mr. Chairman.

Commissioners, following up on my -- on our conversation or my acknowledgment earlier at agenda conference, I want to publicly introduce our -- our successor to Greg Shafer's departure, Judy Harlow.

As most of you know her -- she's a long-time employee at the Commission. I am tired of singing her praises. So, I won't go into all of that -- I mean that in a good way. So, we won't get into that and embarrass her in public.

Just a -- just a quick note, for your SEC fans, she's a -- she's a double Tiger, right, go Tigers, LSU. And she -- as I had mentioned, she

joined us in 1991. So, she has a -- a great breadth and great depth of experience at the Commission. And hopefully, she'll be working close with all of you.

CHAIRMAN GRAHAM: Do you have big shoes? Because you have big shoes to fill.

(Laughter.)

MS. HARLOW: I do feel like Greg has created a legacy. He's created a team out of the division. And I hope to carry that forward.

And we tried to duct-tape him to his chair, but he wouldn't allow it.

CHAIRMAN GRAHAM: Well, you started off correctly by using the right word, "team."

COMMISSIONER FAY: We should have a ceremonial smashing of his Gator cup.

COMMISSIONER BROWN: That won't happen. That won't happen. We will fight you.

(Laughter.)

MR. BAEZ: That's all, Commissioners. Thank you.

CHAIRMAN GRAHAM: That was it?

Okay. Other matters? Anything else?

All right. So, that means that we are adjourned.

And we start the NCRC in -- 1:30, we'll call it 1:40. We'll see you then.

(Whereupon, proceedings concluded at 12:19 p.m..)

CERTIFICATE OF REPORTER

STATE OF FLORIDA)
COUNTY OF LEON)

I, ANDREA KOMARIDIS, Court Reporter, do hereby certify that the foregoing proceeding was heard at the time and place herein stated.

IT IS FURTHER CERTIFIED that I stenographically reported the said proceedings; that the same has been transcribed under my direct supervision; and that this transcript constitutes a true transcription of my notes of said proceedings.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

DATED THIS 15th day of August, 2018.

ANDREA KOMARIDIS
NOTARY PUBLIC
COMMISSION #GG060963
EXPIRES February 9, 2021