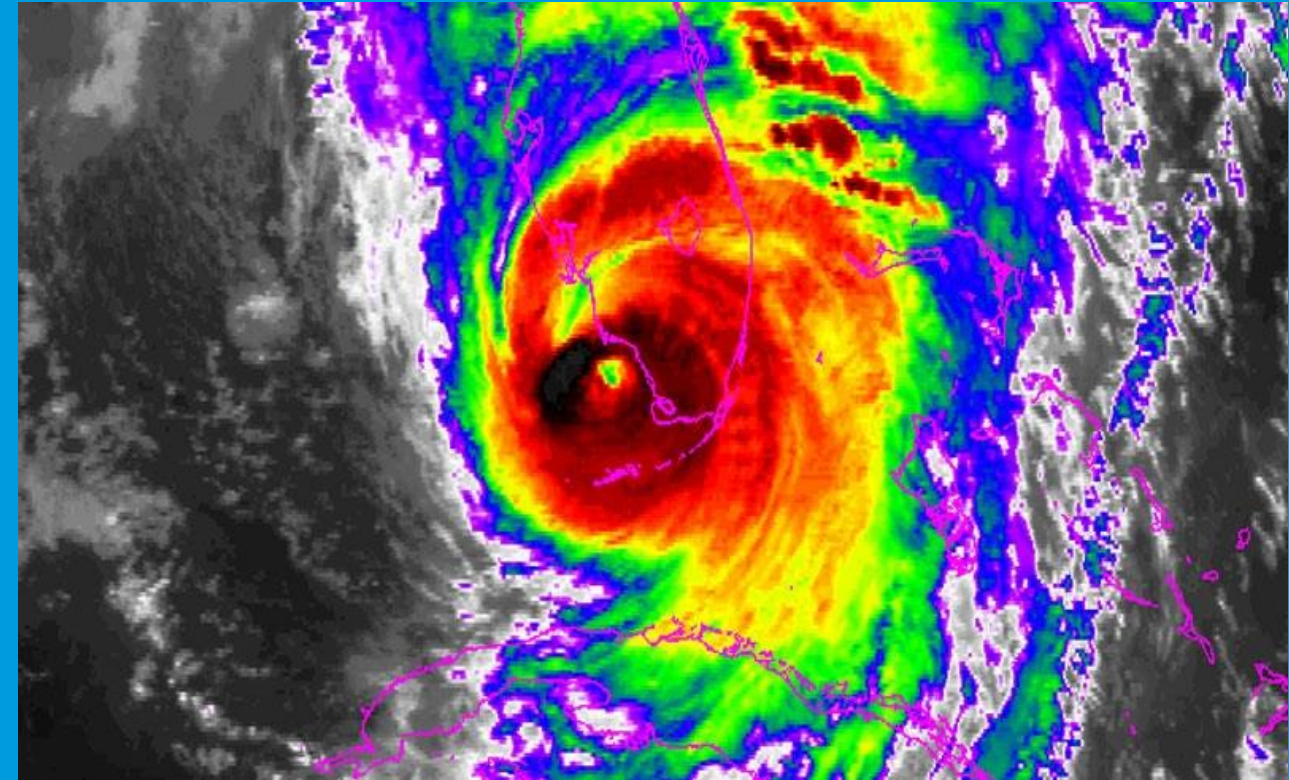
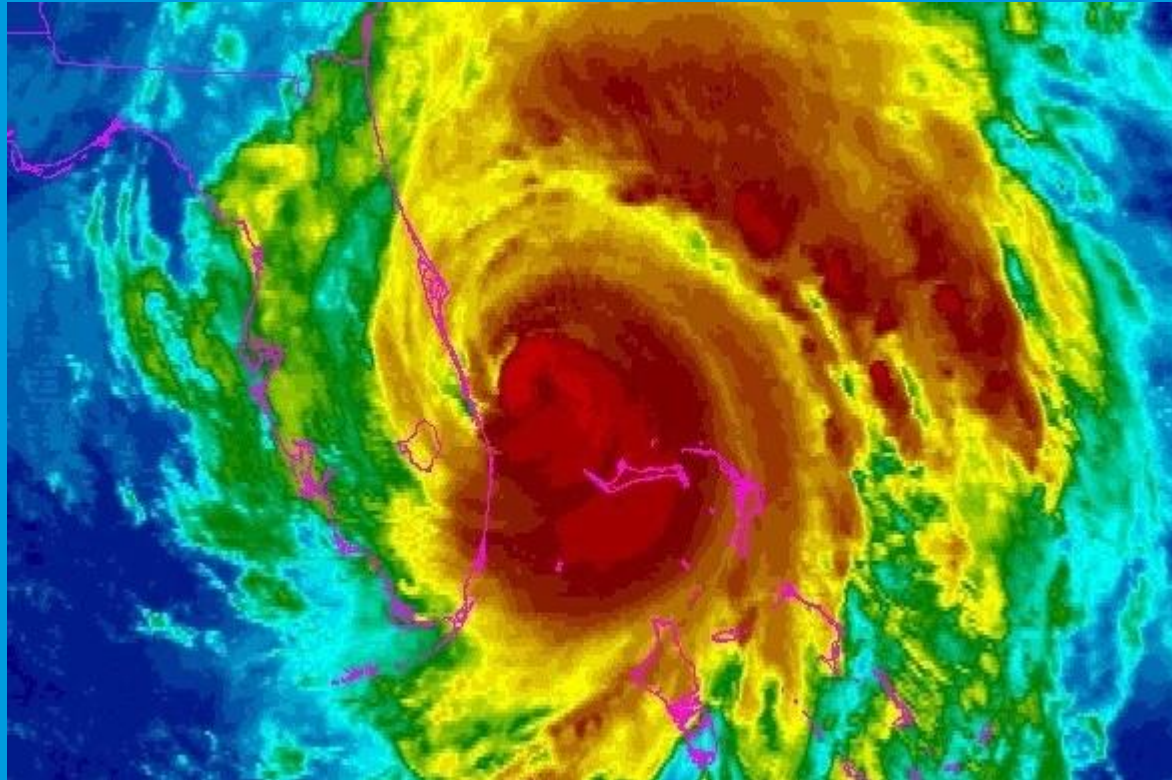




**FPL**®



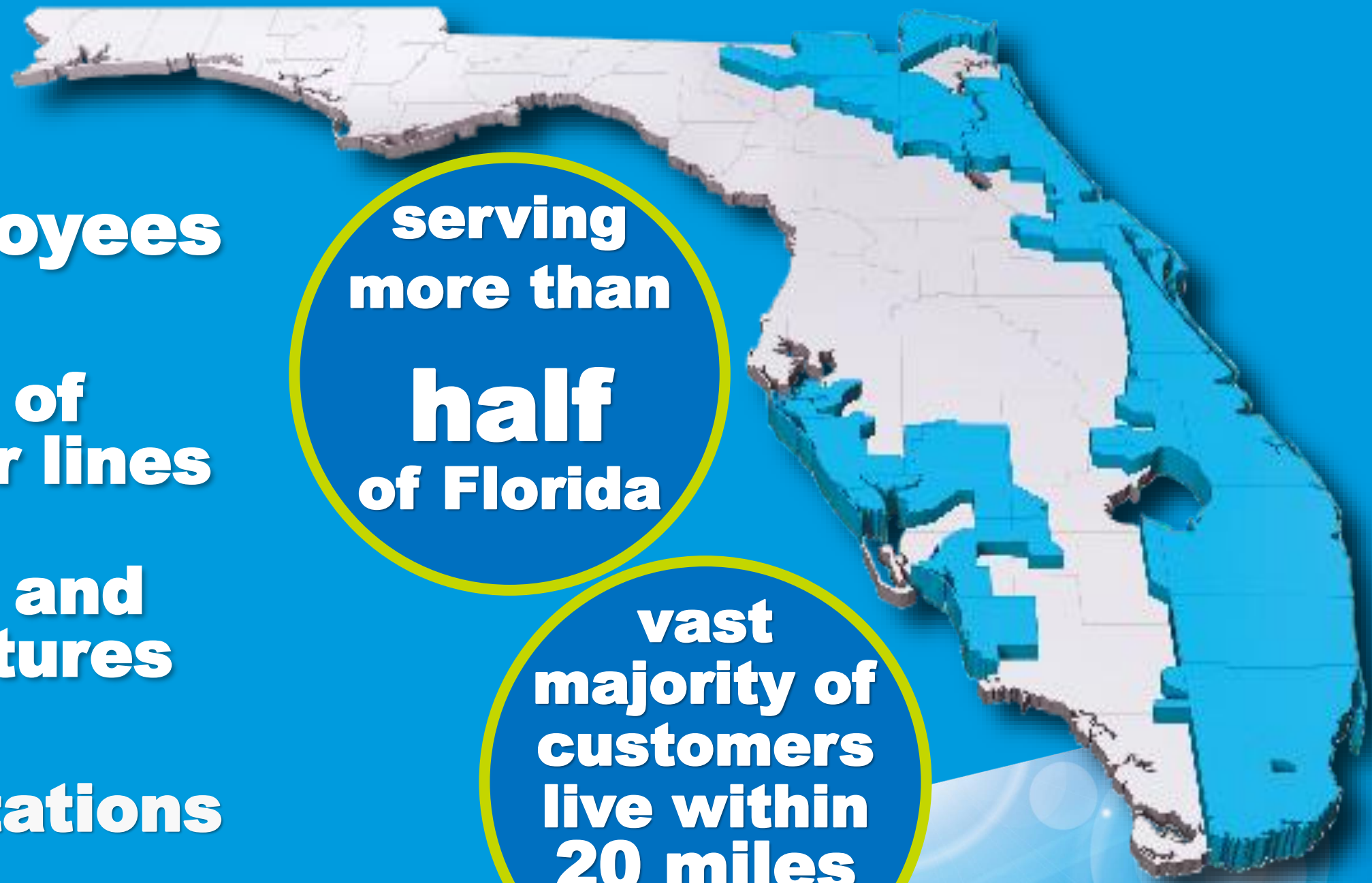
# FPSC Hurricane Preparedness Workshop for 2019

## April 4, 2019

Tom Gwaltney, Sr. Director Emergency Preparedness – Power Delivery



# FPL Power Delivery (Transmission and Distribution)



**3,000** employees

**75,000** miles of power lines

**1.3 million** poles and structures

**600+** substations

serving more than  
**half**  
of Florida

vast majority of customers live within  
**20 miles**  
of coast

# Requested Workshop Presentation Topics

- ▶ **Vegetation Management**
- ▶ **Pole Inspections**
- ▶ **Storm Hardening**
- ▶ **Storm Preparedness**
- ▶ **Lessons Learned**

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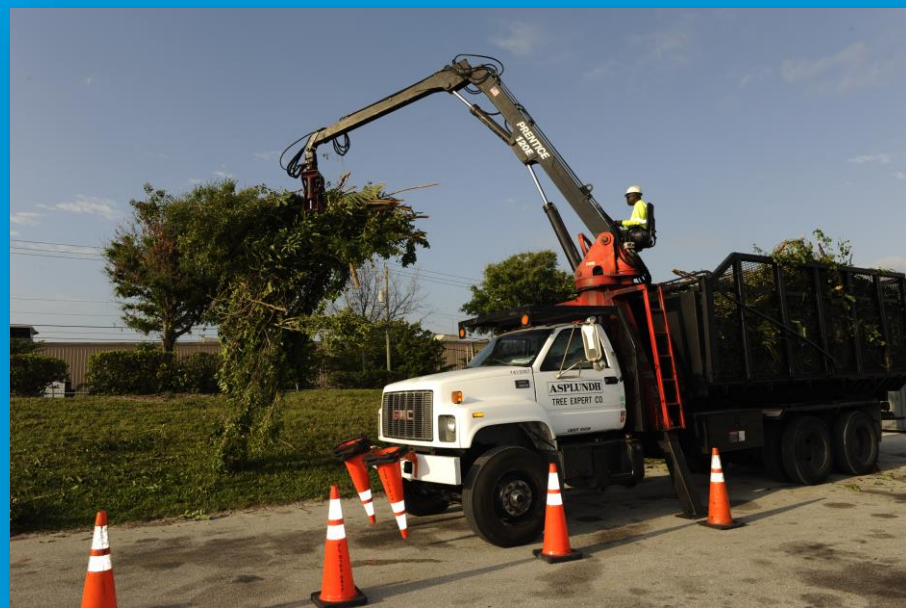


# Vegetation Management



## ▶ Distribution

- ▶ Feeders: 3-year avg. cycle (+ mid-cycle trimming)
- ▶ Laterals: 6-year avg. cycle
- ▶ Miles trimmed (2018)
  - ▶ Feeders: 11,344 (4,251 cycle; 7,093 mid-cycle)
  - ▶ Laterals: 3,926 miles
- ▶ Before peak of storm season – inspect/trim CIFs



## ▶ Transmission

- ▶ Inspect and Protect Program
  - ▶ Inspect right-of-way at least 2 times per year
  - ▶ Maintain clearances annually - 7,100 miles
  - ▶ Meet mandatory NERC-established requirements
- ▶ Before peak of storm season – perform aerial patrols

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# Pole / Structure Inspections



- ▶ **Annually inspect / test for strength and loading**

- ▶ **1.2 million distribution poles**

- ▶ 8-year cycle (wood & concrete)
- ▶ In 2018 - 156,010 inspected / 135,559(W) / 20,451(C)
- ▶ 4.2% overall failure rate – 4.8%(W) / 0.3%(C)

- ▶ **67,000 transmission poles/structures**

- ▶ Visually inspect 100% annually
- ▶ Strength/load test cycles: wood: 6-year / concrete: 10-year
  - ▶ In 2018 - 2,103 (W) / 7,542 (C/S)
- ▶ 0.6% overall failure rate – 16.4%(W); 0.04%(C/S)



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# Storm Hardening



## ► Distribution

- 2018 – Continuing with EWL strategy - hardened 200 feeders;
- 2019 – 230 feeders planned
- 2018 – UG lateral pilot – To date, 5 laterals / 3 miles converted;
- 2019 - 152 laterals planned (60 miles, throughout service territory)



## ► Transmission

- 2018 – Continue to replace wood structures – 1,117 replaced - system now 93% steel / concrete
- 2019 – 1,974 replacements planned



## ► Impacts of 2016-2018 storms on hardening efforts

- Experienced some delays - still expect to replace all wood transmission structures by 2022 / all feeders hardened/underground by 2024

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# Storm Preparedness



- ▶ **Implementing technology improvements to enhance storm damage forecasting / restoration processes**
- ▶ **Logistics**
  - ▶ Increase fuel & materials inventories / pre-stage materials prior to storm season
- ▶ **Annual Drills**
  - ▶ Corporate-wide dry-run - May 2 & 3
  - ▶ Full-scale staging site exercise - May 13 – 16
- ▶ **Mutual Aid Organizations/ Agreements**
  - ▶ Southeast Electric Exchange (SEE)
  - ▶ Edison Electrical Institute (EEI)
  - ▶ Florida Electric Power Coordinating Group, Inc. (FCG)
  - ▶ Pre-negotiate contracts with restoration vendors



# Storm Preparedness - continued

- ▶ **Have conducted annual storm preparedness meetings with all EOCs**
- ▶ **Continuing customer outreach meetings/presentations**
  - ▶ 900-1000 presentations annually
  - ▶ Presentations cover various topics (e.g., storm readiness, reliability, RTRP)
- ▶ **FPL provides info to customers re: how to operate solar equipment during outage (if customer has specialized inverter/battery system)**

# Storm Preparedness – continued



- ▶ **Use multiple channels / methods for customer communications – before, during and after storm**

- ▶ News releases and daily press conferences
- ▶ Targeted ads and customer emails
- ▶ Media interviews and opportunities in hard hit areas

- ▶ **Use digital / face-to-face communications**

- ▶ Social media for prep and safety messages, as well as restoration updates
- ▶ Community response kiosks in hardest hit areas

- ▶ **Provide daily e-mails/hourly updates to Gov't. Portal Website – includes localized outage/restoration info**

- ▶ **Made improvements to address customer communication issues experienced during Hurricane Irma**



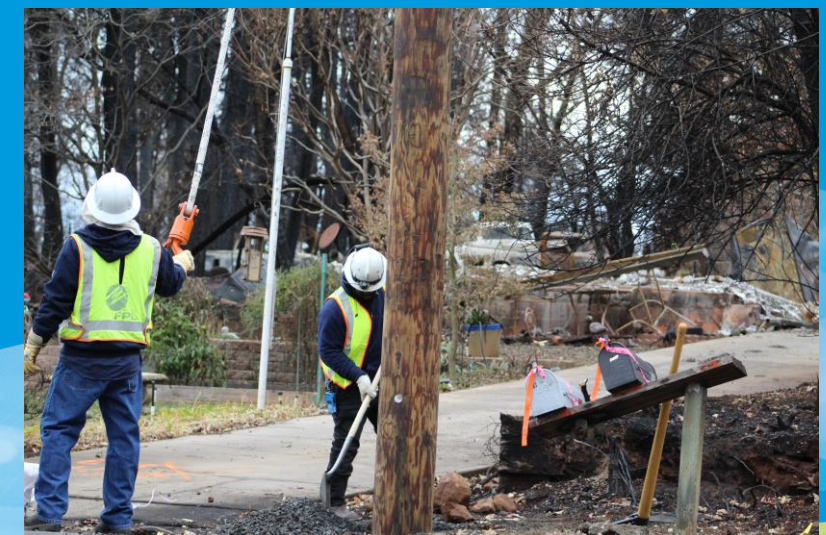
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# Lessons Learned – 2018 Storm Season

- ▶ **For FPL - No direct landfall / major storm impacts**
  - ▶ No changes to third party agreements
- ▶ **Mutual assistance provided in 2018:**
  - ▶ Hurricane Florence (North Carolina)
  - ▶ Hurricane Maria (Puerto Rico)
  - ▶ Hurricane Michael (Florida Panhandle)
  - ▶ Camp Fire (California)
  - ▶ Experiences reinforce FPL's processes/initiatives
    - ▶ Need well developed plan
    - ▶ Pre-staging resources / materials
    - ▶ Hardening beneficial
    - ▶ Non-traditional mutual assistance





# Questions?

