

FPL Emergency Preparedness and Response

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Sr. Director of Emergency Preparedness



FPL is the state's largest utility, serving more than half of Florida's population

43 counties served

34,550 square miles

76,587 miles of distribution lines

9,048 miles of transmission lines

1.4 million poles

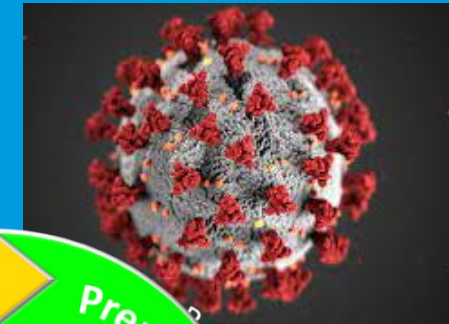
1.1 million transformers

809 substations



Emergency Preparedness and Response

- ▶ **Manage and institutionalize Corporate Emergency Management Plan (CEMP) framework**
 - » Consistent activation triggers
 - » Comprehensive all-hazards approach
- ▶ **Execute all emergency plans**
 - » Storm/severe weather
 - » Capacity shortfall
 - » Cyber and physical security
 - » Grid Emergencies
 - » Wildfire
 - » Mutual Assistance
- ▶ **Ensure business continuity**
- ▶ **Leverage technology tools**
- ▶ **Foster strategic partnerships**



Year-round planning and practice ensures our readiness

- ▶ **Corporate-wide dry-run conducted annually in May**
 - » Incorporate lessons and industry guidelines into storm processes
 - » Implementing technology improvements to enhance storm damage forecasting/restoration processes
 - » Coordination with National Guard, DOE, EEI and other partners
- ▶ **Conducted incident management training workshops**



2004 and 2005 storm seasons forever changed our business



In 2006, after seven storms in two years, we began executing our “Storm Secure” program



- Hardening**
- Pole inspections**
- Vegetation management**
- Underground conversions**

Hardening efforts

2004/2005
Distribution

13%
underground
0%
hardened
feeders



0%
poles inspected

8,000
miles
trimmed on
average annually

0
customers
converted
from overhead
to underground

Transmission

0
substations
with real-time
flood monitors



58%

concrete
or steel
transmission
structures

Smart grid

257
automated
feeder
switches
installed



YE 2020

14%
underground
47%
hardened
feeders



100%
poles inspected

15,000
miles
Vegetation maintenance
performed annually

50,524
customers
converted
from overhead to
underground

232
substations
with real-time
flood monitors



98%

concrete
or steel
transmission
structures

6,212
automated
feeder
switches
installed



Our grid investments continue to provide customer benefits today and for years to come

Our hardened facilities allow us to respond faster during an event

► **Command Center**

- » CAT 5-rated building, designed for 24/7 operation
- » Coordination among all business units
- » Accommodates more than 200 employees

► **Distribution Control Center**

- » Operates 24 hours a day, 365 days a year
- » 71,000 sq. ft., state-of-the-art CAT 5-rated facility
- » Offers capacity for up to 100 storm riders
- » Monitors smart grid devices across Florida

► **Hardened Service Centers**

- » 12 centers hardened to withstand hurricane-force winds
- » Capable of pre-staging equipment and 100 storm riders at each service center



Wilma versus Irma

- Hurricane winds (74+ mph)
- Strong tropical storm winds (55-73 mph)
- Moderate tropical storm winds (39-54 mph)



Hurricane Wilma 2005






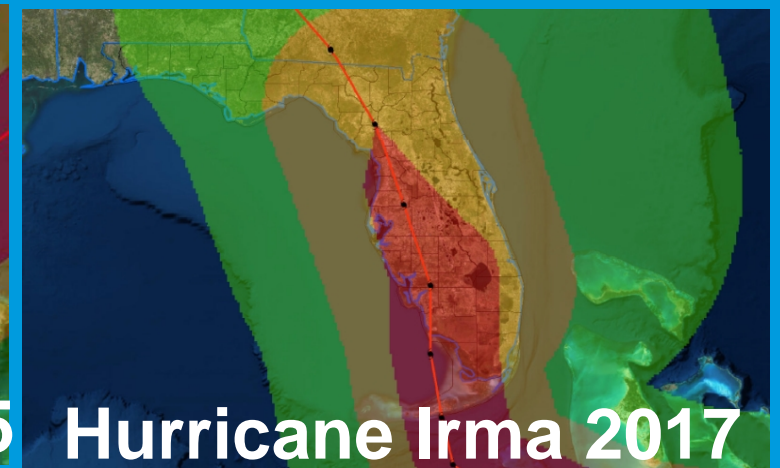
Hurricane Irma 2017

Saffir-Simpson Scale	Category 3	Category 4
Maximum sustained winds in Florida	120 mph	130 mph
Cyclone Damage Potential Index	2.8	4.3
Poles damaged	12,400	4,600
Customers impacted	3.2 million	4.4 million
Counties impacted	21	35
% of FPL customers	75%	90%

*Index developed by the National Center for Atmospheric Research that rates a storm's ability to cause destruction

Wilma versus Irma

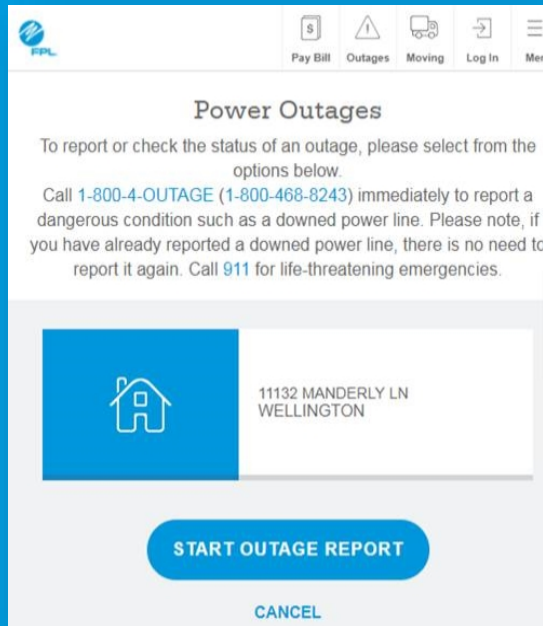
-  Hurricane winds (74+ mph)
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Substation outages	241	92
Substations restored	5 days	1 day
Customer restoration	18 days	10 days
50% of customers restored	5 days	1 day
75% of customers restored	8 days	3 days
95% of customers restored	15 days	7 days
Average customer outage	5.4 days	2.3 days

Key improvements moving forward

Working to enhance Restoration Information



Educating communities about Right Tree, Right Place



Building on proven Hardening Investments



Three-year Underground Pilot

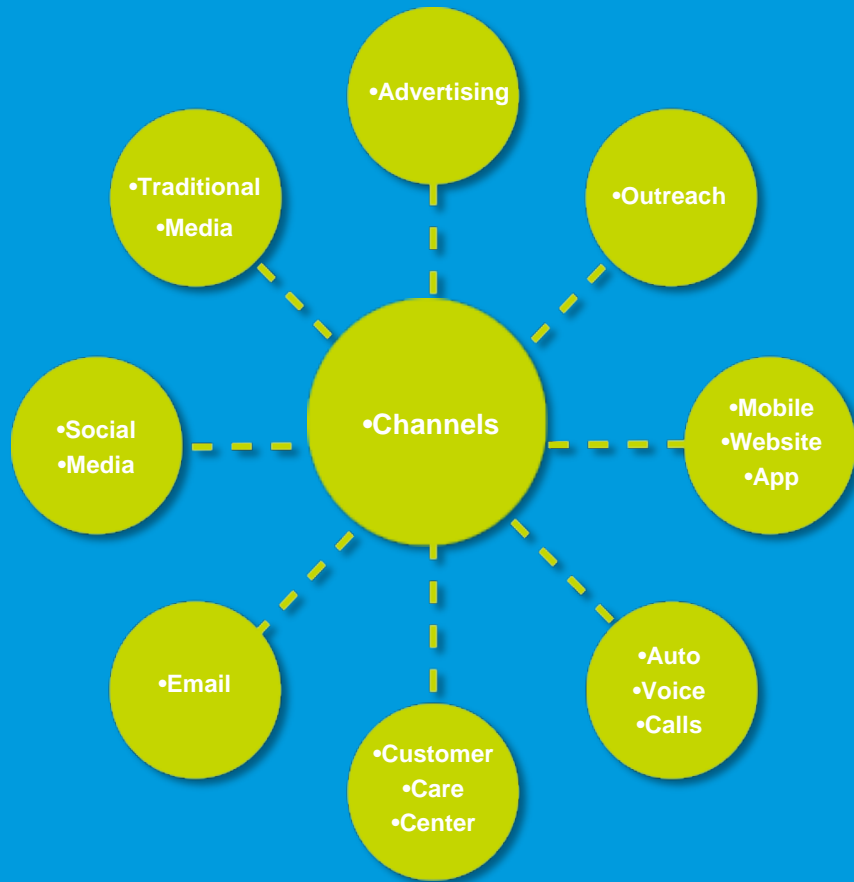


We've made significant investments in technology to benefit customers

- ▶ Drones are used to assess damage
- ▶ Smart meters help to assess restoration status
- ▶ Mobile Command Centers and Community Response Vehicles are deployed to impacted areas



Customer/Stakeholder Outreach and Communication



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

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

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

- » Social media for prep and safety messages, as well as restoration updates
- » FPL App available from the App Store or Google Play
- » Community response kiosks in hardest hit areas

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

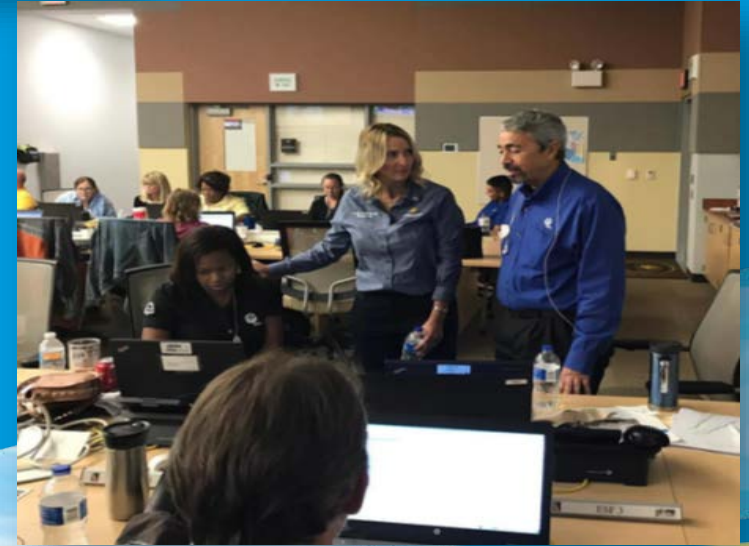
Working with the Community

- ▶ **Meet with County Emergency Operation Centers to identify critical facilities necessary to support the community**
- ▶ **Magnitude of event dictates level of government contact**
- ▶ **Communication with local leaders is ongoing via email, phone, Internet and one-on-one contact with External Affairs representatives**
 - » Dedicated government update Web page activated during severe storm events



Ensure that FPL and local government restoration priorities are aligned

Local partners are key to recovery efforts



Leveraging Partnerships

Florida National Guard



Florida Highway Patrol



Partner Utilities



We are all in this together!!



FPL®