# Understanding Underground

### The overhead to underground conversion process

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POWERING TODAY. EMPOWERING TOMORROW.<sup>®</sup>

### What We Plan To Do Today...

- Overhead and underground systems
  Main factors
- The undergrounding process
- Financial Support
- Storm Securesm
- Our commitment to you

# **Encourage Underground**

- Almost 40% FPL distribution currently underground
- 67% of new homes and businesses are underground

• FPL

- Supports ordinances requiring undergrounding
- Received approval to invest portion of the cost to convert overhead lines to underground



### **Overhead-Underground Main Factors**

- Aesthetics
- Reliability performance
- Conversions
  - Cost
  - Process

### **Main Power Facilities**

### from poles & wires...







Feeder Switches

#### ...to cabinets



#### Pad Mounted Switch Cabinet

### Transformers...

### go from aerial...



### ...to padmount



### Service "Drops"

#### go from weatherhead...



#### ...to riser



Requires a licensed electrician

# **Reliability: Normal Weather**

	Overhead Lines	Underground Lines	
Outage Frequency	More Susceptible to	Less More resilient to	*
	growing vegetation	weather elements	N.
Length of	Shorter	Longer	
Outage	Easier to locate and repair damage	Damage is difficult to locate	
		Repair may require excavation	
		Delayed by flooding	



# **Reliability: Severe Storm Conditions Overhead**

### Susceptible to:

- Wind
- Debris
- Soft ground

# Underground

Susceptible to:

- Flooding
- Tidal surge
- Saltwater contamination





### **Conversion Costs**

- Contributing factors
  - Congestion & density
  - Site restoration
    - Landscaping
  - Easements
  - Streetlights
- Cost range \$500,000 to \$4 million per mile
  - FPL cost only
  - Does not include telephone and cable



Field conditions can present challenges and additional costs during conversion.

### FPL's Plan to Support Conversions

- FPL has received approval to invest 25% of cost of qualified underground conversion projects sponsored by local governments
  - Governmental Adjustment Factor (GAF), 25% of the base Contribution-In-Aid-of-Construction (CIAC)
  - GAF is based on avoided storm restoration costs

# **GAF Eligibility Requirements**

- Local government must be the applicant
- Community-wide project
  - Approximately 3 pole line miles or minimum 200 detached units
  - Islands or peninsulas
  - All affected customers must convert their services
     from overhead to underground

### **Conversion Process**

- Applicant provides written request
- FPL provides non-binding ballpark estimate
- Applicant pays engineering deposit
- FPL provides a preliminary facilities layout
- Applicant secures easements or ROW agreement while FPL starts the engineering
- FPL performs detailed engineering/determines the binding cost

# **Right-of-Way Agreement**

- Allows underground equipment to be placed in road rights-of-way as an alternative to private easements
  - Facility installations criteria are met
  - Local government assumes the responsibility for future relocations



CONVERTING OVERHEAD ELECTRIC DISTRIBUTION FACILITIES TO UNDERGROUND IN YOUR COMMUNITY

A GUIDE FOR LOCAL GOVERNMENT REGARDING THE PLACEMENT OF FACILITIES

# **Everyday Reliability**

- Continue to harden the electrical Network
- Aggressive pole
   inspection schedule
- Cycled line clearing
- Encourage underground lines



### **Our Commitment to You**

- Maintain dialogue with the community
- Listen to your interests and priorities
- Share updated information
- Provide dependable power and reliable service

