

Understanding Undergrounding

Florida Power & Light Company operates 75,000 miles of power lines covering more than half the state. Overhead power lines account for about 60 percent of the power lines that distribute power to residential and business customers. The remaining 40 percent of power lines are underground.





Since 2006, FPL has invested nearly \$4 billion in the energy grid to make it stronger and more storm-resilient. Part of that investment has been focused on hardening power lines, which includes:

- » Inspecting all of our poles for strength
- » Installing stronger poles that are able to withstand hurricane-force winds
- » Shortening spans between poles
- » Undergrounding power lines

Hurricane Irma – a powerful storm that affected FPL's entire service area of 35 counties – caused more than 4.4 million FPL customers to lose power. The No. 1 cause of outages during the storm was trees, vegetation and other wind-blown debris affecting the company's power lines and other equipment.

We have seen the benefits of underground power lines for our customers:

- » During day-to-day operations, underground power lines perform 50 percent better than overhead power lines.
- » During Hurricane Irma, underground power lines performed 85 percent better than overhead power lines because they were not affected by wind-blown debris, lightning and other elements.

While underground power lines perform better in a storm involving wind, they are still susceptible to outages, primarily due to flooding.

- » Water and electricity don't mix, so our crews need to wait until water recedes and it is safe to restore power.
- » In some cases, repairs to underground power lines may take longer than overhead power lines because of the length of time to diagnose and repair the problem.

It's important to note that most electric service originates from overhead power lines, which can affect customers who receive power from underground power lines.





Directional Boring

In most FPL Storm Secure Underground Program projects, FPL or our approved contractors use low-impact drilling equipment to minimize disruption to your property.



Construction of Underground Power Lines

Before construction of underground power lines takes place, FPL or our approved contractors will locate all current underground utilities, such as water, sewer, gas and telecommunications.

- » Colored markings and flags will be placed on your property to ensure safe installation of the underground equipment for your electric service.
- » We will also discuss any other underground facilities, such as sprinkler systems and septic tanks.

In most cases, FPL or our approved contractors will use low-impact drilling equipment, which minimizes the disruption to your property. This process, known as



directional boring or horizontal directional drilling, installs underground piping to safely place our electric cable to connect power to your home or business. Unlike open trenching, directional boring allows FPL to install underground equipment while minimizing impact to trees and other vegetation on your property. The underground facilities will be installed 36 inches to 48 inches below the surface, or deeper, if necessary, to avoid tree roots.

While all of the power lines will be underground, some equipment will be placed above ground to ensure safe and reliable power to your home and in your neighborhood.

Once construction is complete, we pledge to restore your property to its pre-construction condition.





Junction Box Adapter

In order to connect your electric service to the new underground equipment, Florida Power & Light Company may need to retrofit your meter enclosure with a junction box.



- » A meter enclosure is the equipment you own that is attached to your home where the electric meter is placed. The enclosure safely and securely separates FPL wiring from your wiring that goes into the panel box. These meter enclosures should only be opened by an FPL representative, approved contractor or qualified professional electrician.
- » A junction box adapter will be used if power is currently provided from an overhead power line.
- » The junction box will be installed at the time of the planned outage for the underground conversion. The timing of this will be communicated prior to the outage. Sufficient space on the wall will be required to install the junction box.



- you may elect to replace the existing meter enclosure with one that will accept new underground cable in place of a junction box adapter. This option would be at your expense and would need to be completed prior to the start of the underground conversion in coordination with FPL.
- » An FPL representative or an approved contractor will discuss the details regarding the placement and removal of electric equipment required for the new underground service.





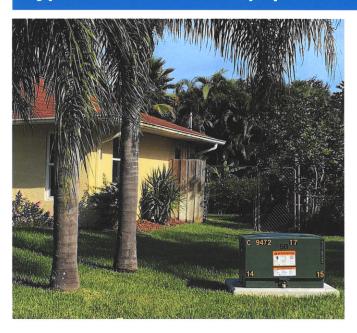
Typical Underground Equipment

When converting overhead power lines underground, Florida Power & Light Company follows strict construction guidelines. These guidelines have been established for the purposes of providing our customers with safe and reliable service.

Underground power lines and equipment work much the same as the current power lines and equipment that are overhead. For instance, power lines that transmit power and transformers that step down power to safely supply it to your home will be converted for your new underground electric service. Not every property will require aboveground equipment. If equipment is needed, a qualified representative will meet with you to discuss the design of your project and the specific equipment that will be installed.

Here are some of the examples of our equipment that may be installed on your property for your new underground electric service.

Typical Residential Equipment



Single Phase Transformer

- Typical dimensions of equipment (pictured):40 inches long by 36 inches wide by 26 inches tall
- » Typical concrete foundation dimensions for transformer: 55 inches long by 48 inches wide and 6 inches tall
- » Required easement for equipment's installation and operation: 10 feet by 10 feet



Underground Handhole

- » Handholes are installed underground. The top plate will be visible.
- » Typical dimensions are 17 inches by 24 inches
- » Required easement for equipment's installation and operation: 10 feet by 10 feet