

*FPL and City of Coral Gables Joint
Public Education Workshop on
Managing Trees Near Overhead
Electric Wires:*





City of Coral Gables



BROOK DANNEMILLER
ASSISTANT PUBLIC WORKS DIRECTOR
LANDSCAPE SERVICES
RLA, LEED AP

JORGE RIVERA
LANDSCAPE COORDINATOR
AGRONOMIST – FIU HORTICULTURE CERTIFIED
CERTIFIED ARBORIST – TRAQ
GI-BPM





FPL



FRANK CANTERO

FLORIDA POWER & LIGHT

MIAMI-DADE GOVERNMENTAL CUSTOMER ADVISOR

CEM, CDSM



FPL AND CITY OF CORAL GABLES JOINT PUBLIC EDUCATION WORKSHOP ON MANAGING TREES NEAR OVERHEAD ELECTRIC WIRES:

This public education workshop is part of an ongoing effort to continually improve service to residents and to further coordination and communication between the City of Coral Gables and FPL.

1. FPL will explain and illustrate its statewide “Right Tree Right Place” program, explaining the need for the appropriate choice of species and location. FPL will describe its vegetation management obligations and practices in the City of Coral Gables as required pursuant to the orders of the Florida Public Service Commission (PSC).
2. The City of Coral Gables will describe its own vegetation management programs on its right-of-way as well as the requirements it has established for the residents in this regard.
3. The standard procedures for FPL pruning trees and removing palms away from electric wires as well as safety concerns will be addressed.

Florida Power & Light Company

How everyone plays a role in keeping trees away from power lines

December 2019



FPL is the largest energy company in the state

645

substations

75,000

miles of
power lines

890,000

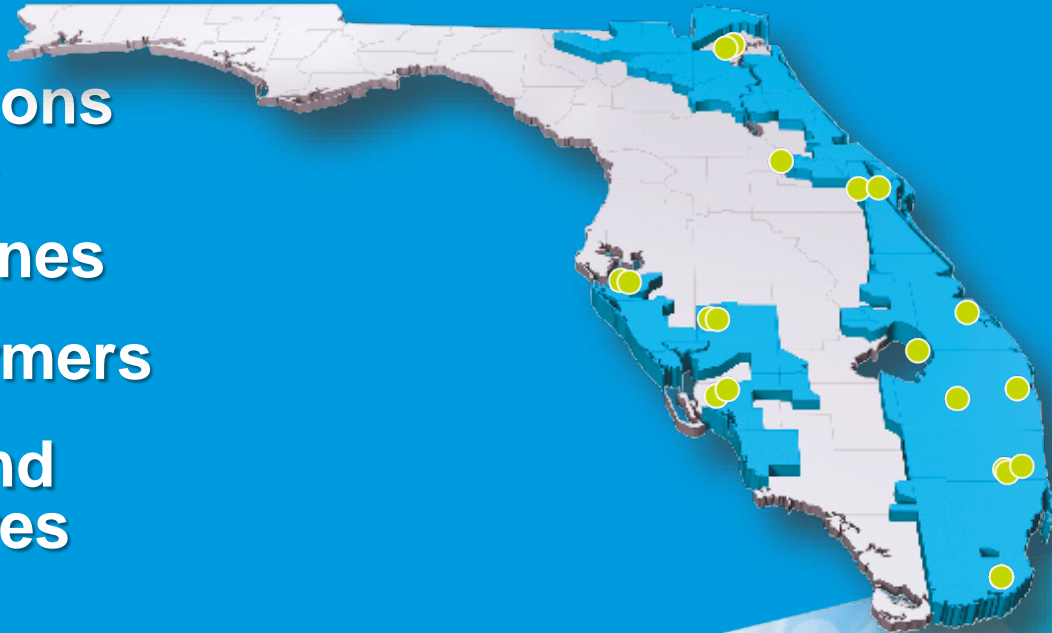
transformers

1.2 million

poles and
structures

5 million

customers



Our Power Delivery team helps ensure reliable service by keeping trees and vegetation away from power lines

- ▶ **Reduces/trims** trees or other vegetation which have the potential to cause outages or momentary interruptions
- ▶ **Educates** customers on proper vegetation maintenance and power line safety
- ▶ **Collaborates** with local leaders to promote FPL's Right Tree/Right Place program

How FPL keeps trees away from power lines

We trim trees and vegetation near power lines on consistent, planned trimming and clearing cycles:

- ▶ Main lines: Three-year average cycle
- ▶ Neighborhood lines: Six-year average cycle
- ▶ Mid-cycle (“hot spot”): Address fast-growing trees and vegetation as needed

Maintains vegetation along 15,000 miles of power lines each year



Since 2006, we have invested nearly \$4 billion into the grid to make it stronger and more storm-resilient



Hardening

Pole inspections

Vegetation management

Overhead to underground conversions

Irma: The No. 1 cause of power outages was falling trees and windblown debris



Hurricane Irma:

A satellite image of Hurricane Irma, showing a large, well-defined eye and a dense, swirling cloud structure. The hurricane is positioned in the upper left quadrant of the frame, with its eye clearly visible. The surrounding clouds are dark and textured, indicating intense storm activity. The background is a dark, grainy satellite image of the Earth's surface.

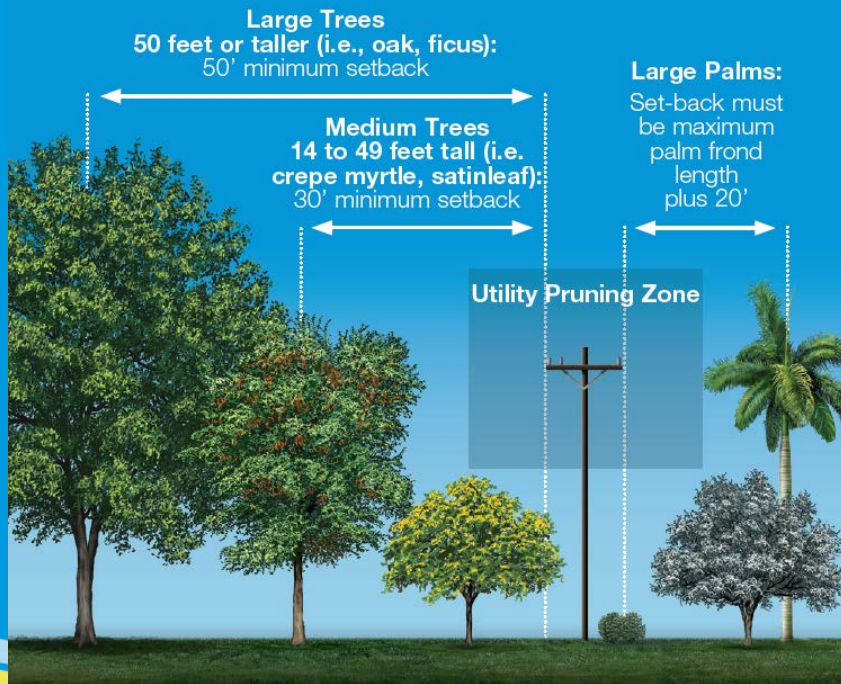
- ▶ Roughly the size of Texas
- ▶ Affected all 35 counties served by FPL
- ▶ Slow-moving storm – impacted some areas for nearly 24 hours

Underground systems generally perform well, but are not indestructible



What can customers do to help keep trees away from power lines?

Follow FPL's Right Tree/Right Place guidelines



Property owners are responsible for safely maintaining trees and vegetation on their property away from power lines



What can customers do?

- ▶ Always hire a qualified professional to trim trees or other vegetation near power lines
- ▶ Plant only small trees and shrubs in areas adjacent to power lines
- ▶ Call 811 before you dig – it's the law



Keep yourself and the end of any object you're holding at least 10 feet from neighborhood power lines and 30 feet from transmission lines

Everyone plays a role in keeping power lines clear

- ▶ Property owners are responsible for safely maintaining trees and vegetation on their property away from power lines
- ▶ FPL is responsible to provide safe and reliable electric service to our customers, including trimming or removing vegetation that a property owner has allowed to grow too close to FPL's power lines

For more: [FPL.com/trees](https://www.fpl.com/trees)



*Resilient Urban Forest
Management Strategies*

TREE CITY USA
FOR 35 YEARS

CORAL
GABLES
THE CITY BEAUTIFUL

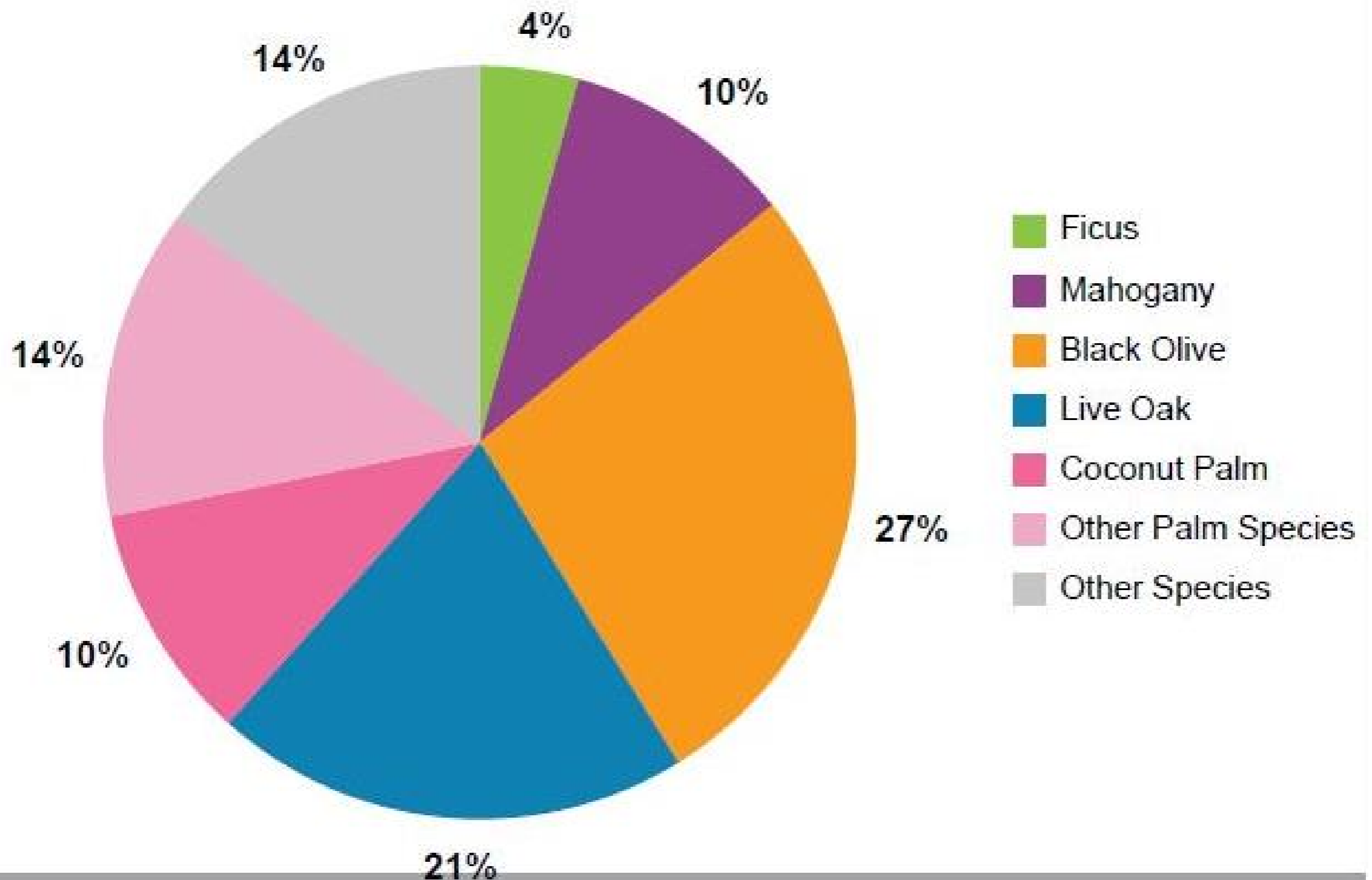
CORAL GABLES URBAN FOREST

Overview

- Approximately 39,000 trees on rights of ways and City property.
- Six contracted full-time tree pruning crews.
- Five certified arborists and two landscape architects on staff.
- City code aims to both protect trees and improve overall health and diversity of the City's urban forest.
- Tree removal permit required for tree removals.
- City code requires tree pruning to be done by an ISA Certified Arborist or licensed tree trimmer (e.g. Broward County Tree Trimmer License.)
- City code specifically states that fruit trees are allowed to be pruned down to a height of 14-15 feet.
- Tree critical root zones must be protected during construction with tree protection fencing.

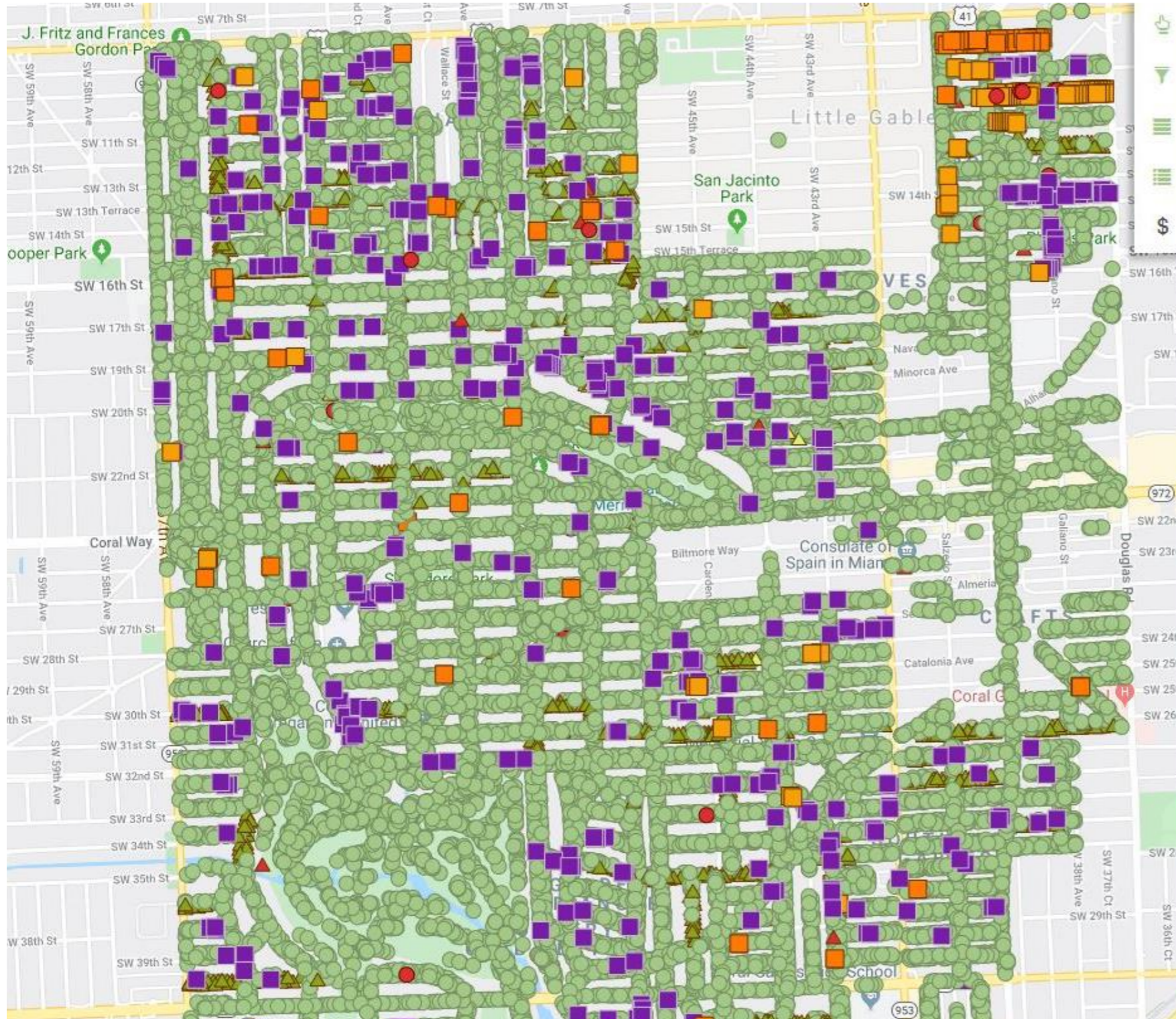
CORAL GABLES URBAN FOREST

Diversity of Tree Species



TREEKEEPER: URBAN FOREST MANAGEMENT SOFTWARE

coralgables.mytreekeeper.com



Tree Benefits:

38,623 total trees

0 selected

Total Yearly Eco Benefits

\$3,273,094.39

Greenhouse Gas Benefits

\$28,310.55

5,585,357.87 lbs CO₂ avoided

3,295,200.22 lbs CO₂ sequestered

Water Benefits

\$617,806.61

61,780,660.52 gallons saved

Energy Benefits

\$448,326.03

3,674,803.50 kWh saved

0 Therms saved

Air Quality Benefits

\$102,528.22

57,805.79 lbs pollutants saved

Property Benefits

\$2,076,123.00

2,348,142.58 leaf surface area (sq. ft.)

TREE SPECIES PRONE TO CATASTROPHIC FAILURE

- **Ficus benjamina Trees**
- **Fruit Trees**
- **Norfolk Island Pines**
- **Some Large Flowering Trees**



TREE PRUNING: CROWN LIFTING



Before

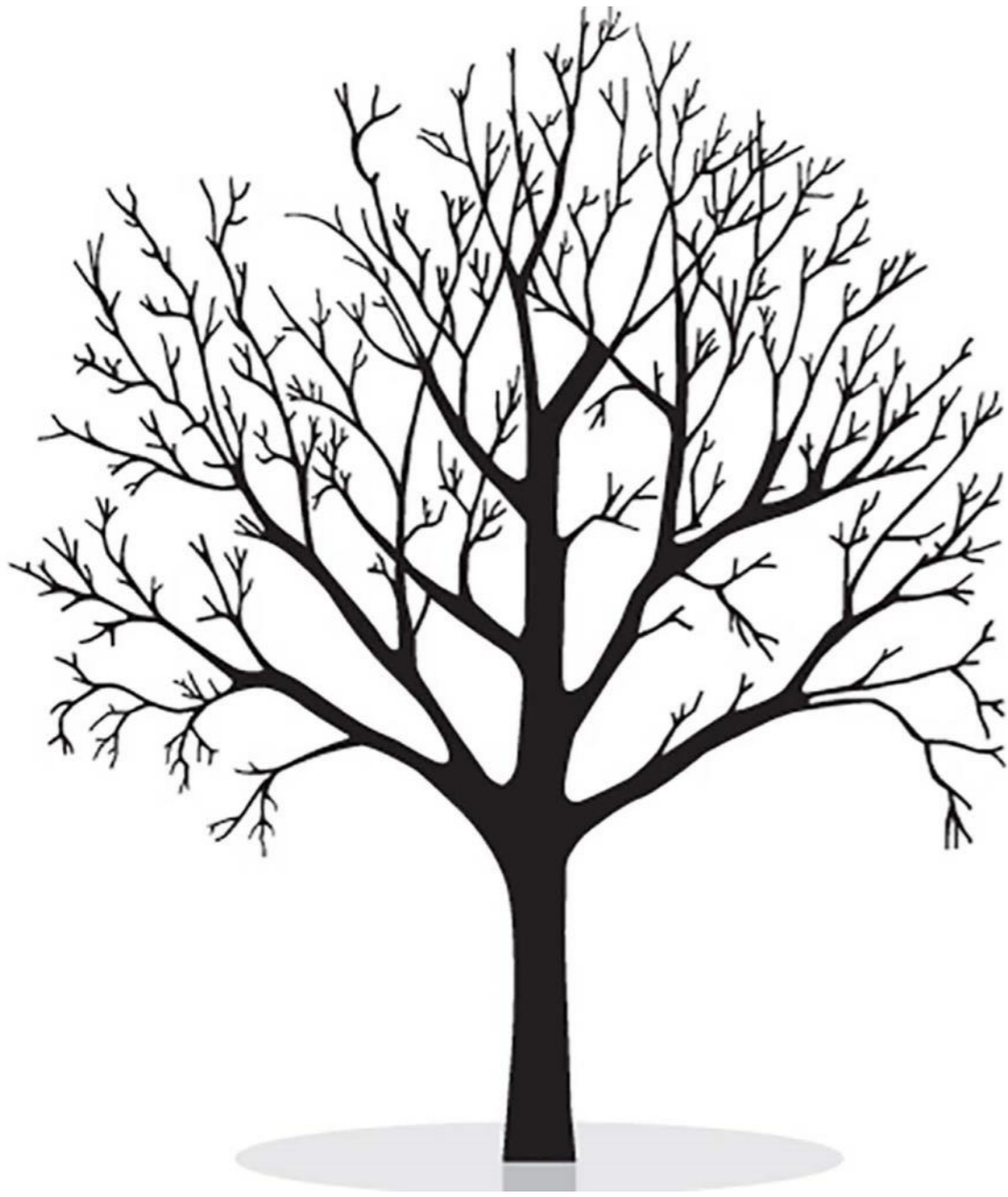


After

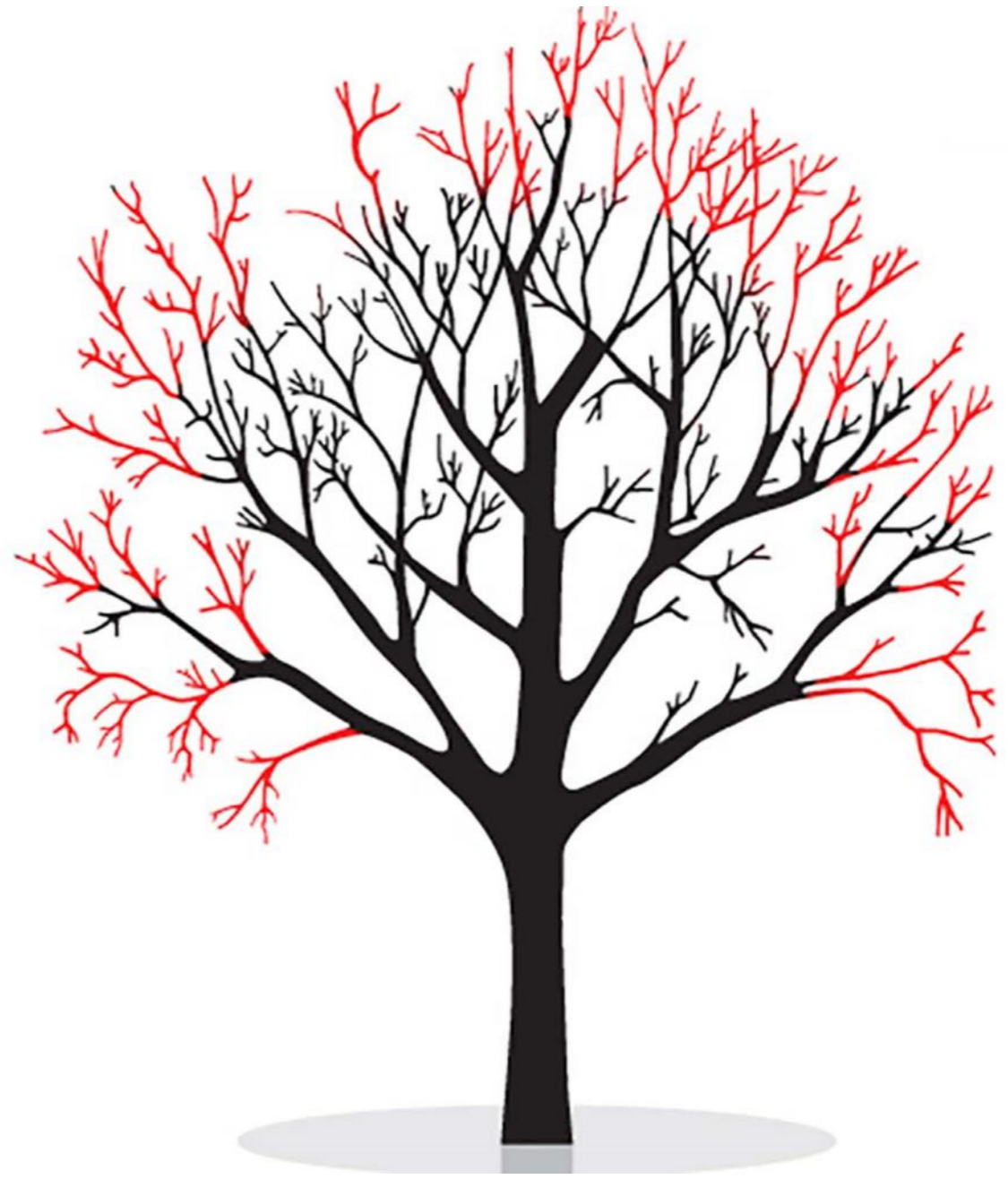
TREE PRUNING: CROWN LIFTING



TREE PRUNING: CROWN REDUCTION



Before



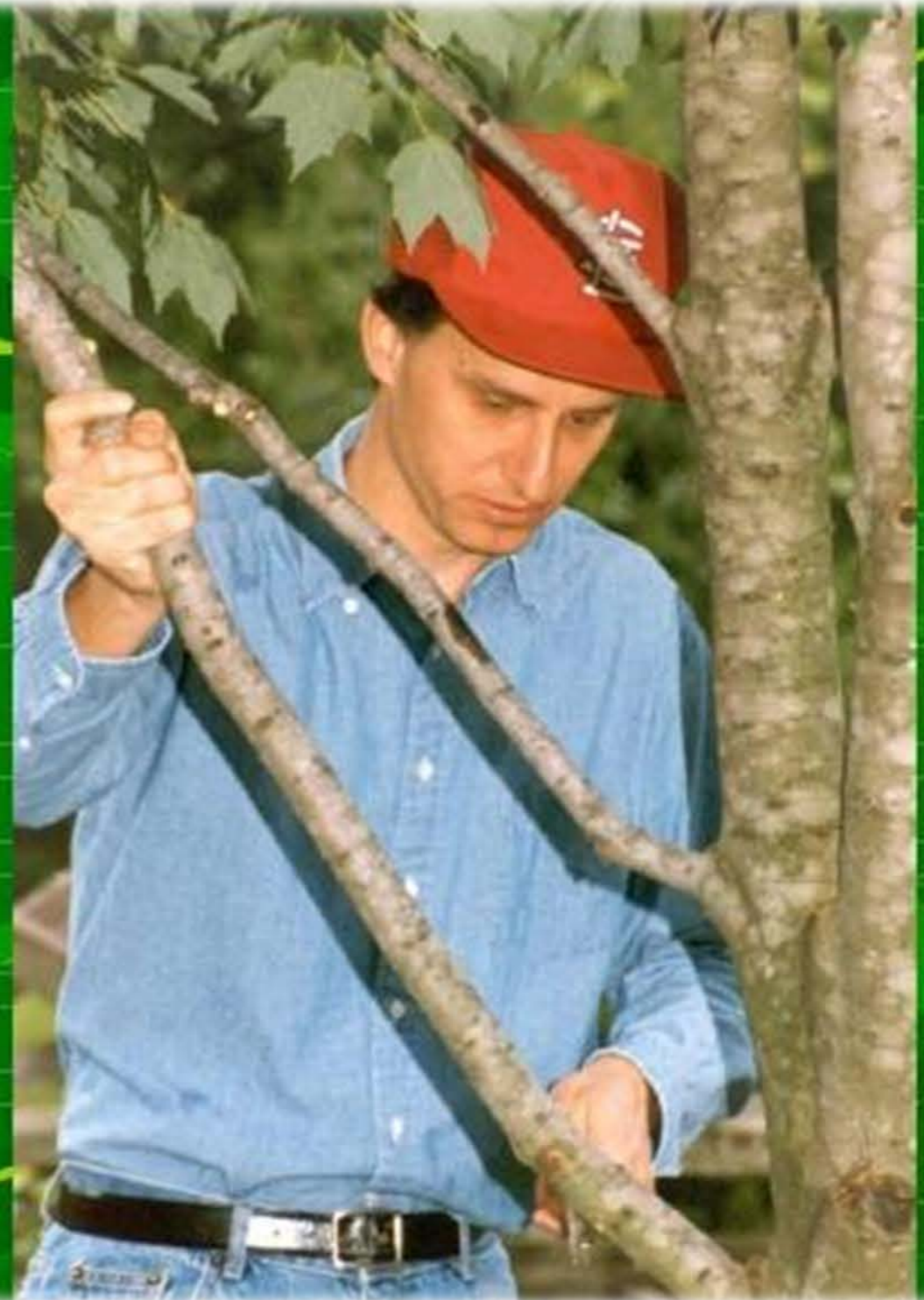
After

TREE PRUNING: CROWN REDUCTION

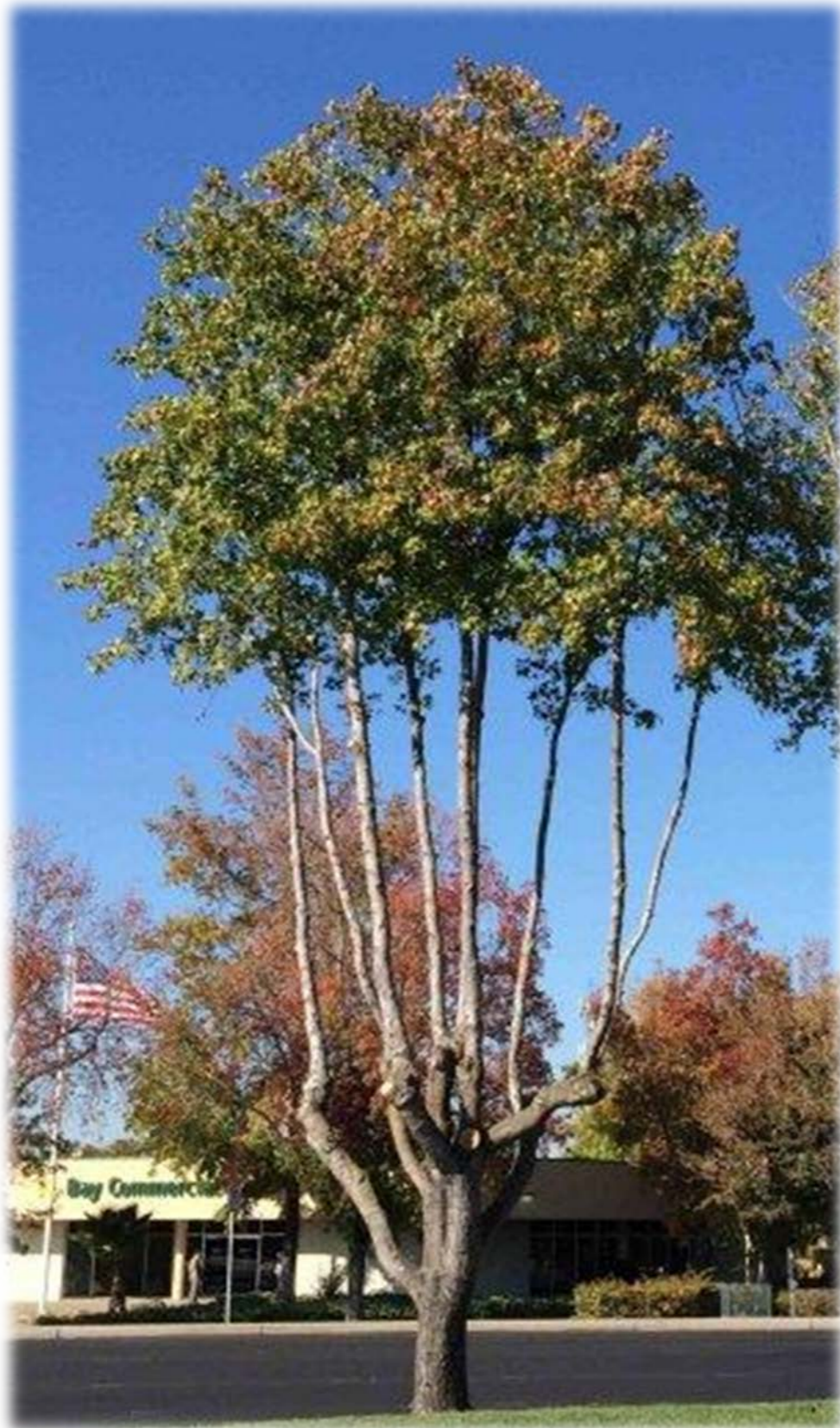


TREE PRUNING: STRUCTURAL PRUNING

- Select and establish the lowest *permanent branch* [branches that will be left in place, often forming the initial scaffold framework of a tree]
- Select and establish *scaffold branches* [the permanent or structural branches of a tree]; 12-18" spacing depending on the ultimate size of the tree



IMPROPER PRUNING: LION TAILING



HAT-RACKING OR TOPPING





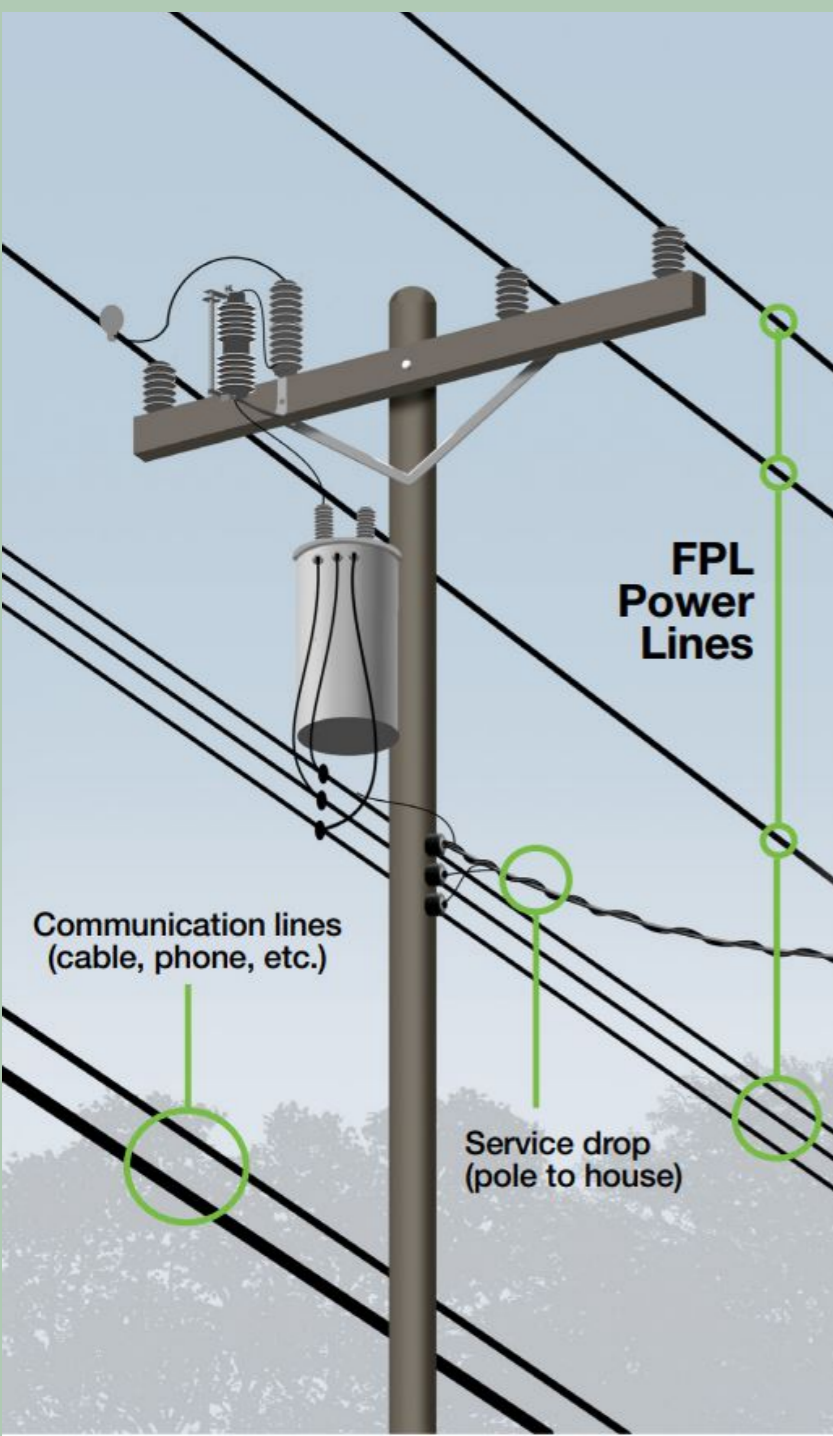
City of Coral Gables



STANDARD PROCEDURES FOR FPL PRUNING TREES AND REMOVING PALMS AWAY FROM ELECTRIC WIRES



FPL TREE PRUNING PROCEDURES



Utility Easements on Private Property:

Coral Gables City Code

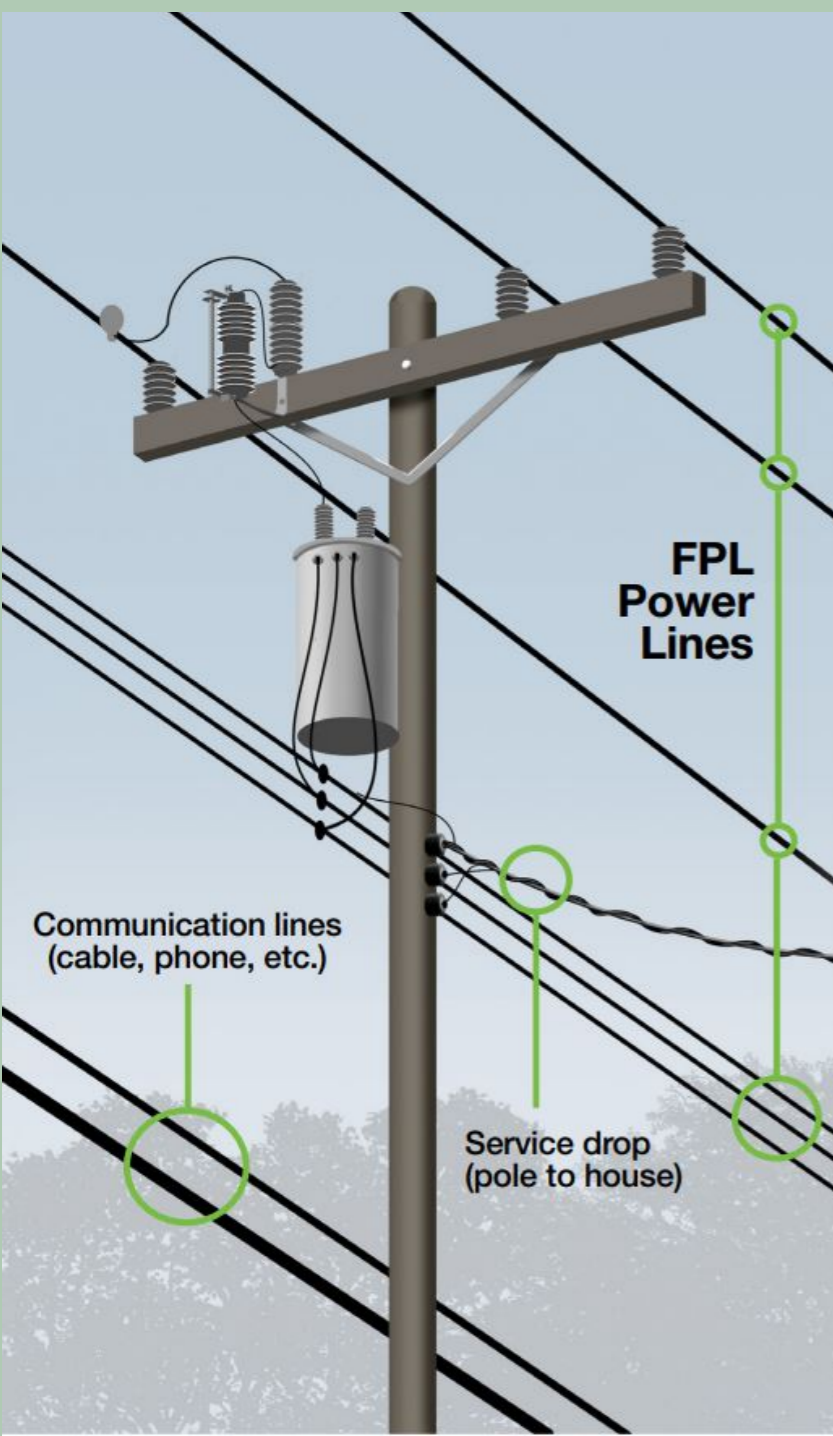
Sec. 78-1. - Restricted use of utility easement property.

It shall be unlawful for any person to construct or maintain buildings or structures,

or to plant or grow trees or shrubbery on any and all easement strips reserved for utility purposes in the city,

or to use the easement strips or land adjacent to the easement strips in any manner whatsoever which does or may interfere with, obstruct, impede or retard the free use of the easement strips for electric, telephone, gas, water or other utility purposes.

FPL TREE PRUNING PROCEDURES



1. When a tree of concern is identified within FPL distribution facilities:

- a) For reference, Florida Power & Light (FPL) distribution facilities are the uncoated (bare) wires typically running along the back and side property lines throughout the residential neighborhoods.
- b) FPL identifies a tree that meets certain conditions and will have authority to “make ready” and/or remove.
 - “Make ready” is an FPL term for pruning a tree or palm back to a safe distance away from the electrical wires which is typically 10’ or more from the wires.
 - Property owner removes tree once FPL completes “make ready” pruning.
 - City of Coral Gables (City) Code Enforcement can get involved to cite property owner if needed.

FPL TREE PRUNING PROCEDURES

“Make ready” is an FPL term for pruning a tree or palm back to a safe distance away from the electrical wires which is typically 10’ or more from the wires.

Side-trim directional pruning



V-trim directional pruning



Proper pruning for tree health



YES

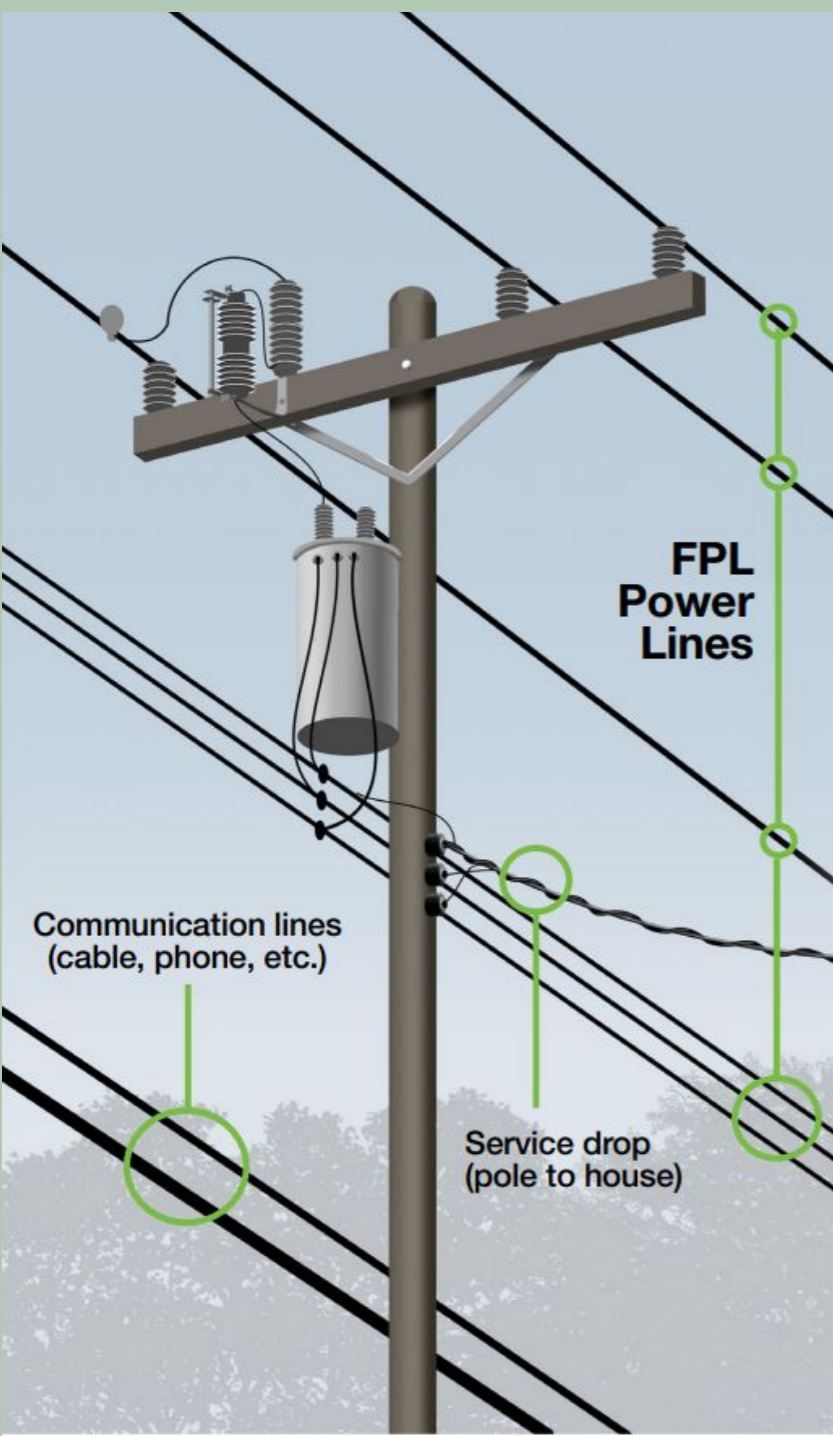
Pruning cuts should be made just outside the branch collar to respect natural growth patterns and direct future growth away from power lines.

NO

Topping trees or leaving branch stubs severely damages trees and encourages rapid regrowth.

NO

FPL TREE PRUNING PROCEDURES



1. When a tree of concern is identified within FPL distribution facilities:

- c) If condition is a small palm or bamboo (i.e. Alexander, Christmas, Areca, or Fishtail Palm)
 - Once the fronds of a small palm make contact with a wire, FPL will have authority to remove the entire palm to the ground; where cutting the palm to the ground is not feasible, FPL must cut the palm trunk at least 1-foot or more below the lowest wire (AT&T).
 - FPL will take a photo with GPS coordinates and dates of the before and after condition.
 - FPL will notify the City via e-mail and will notify the property owner with a door hanger.

City of Coral Gables Standard Procedures for FPL Pruning Trees and Removing Palms Away from Electric Wires

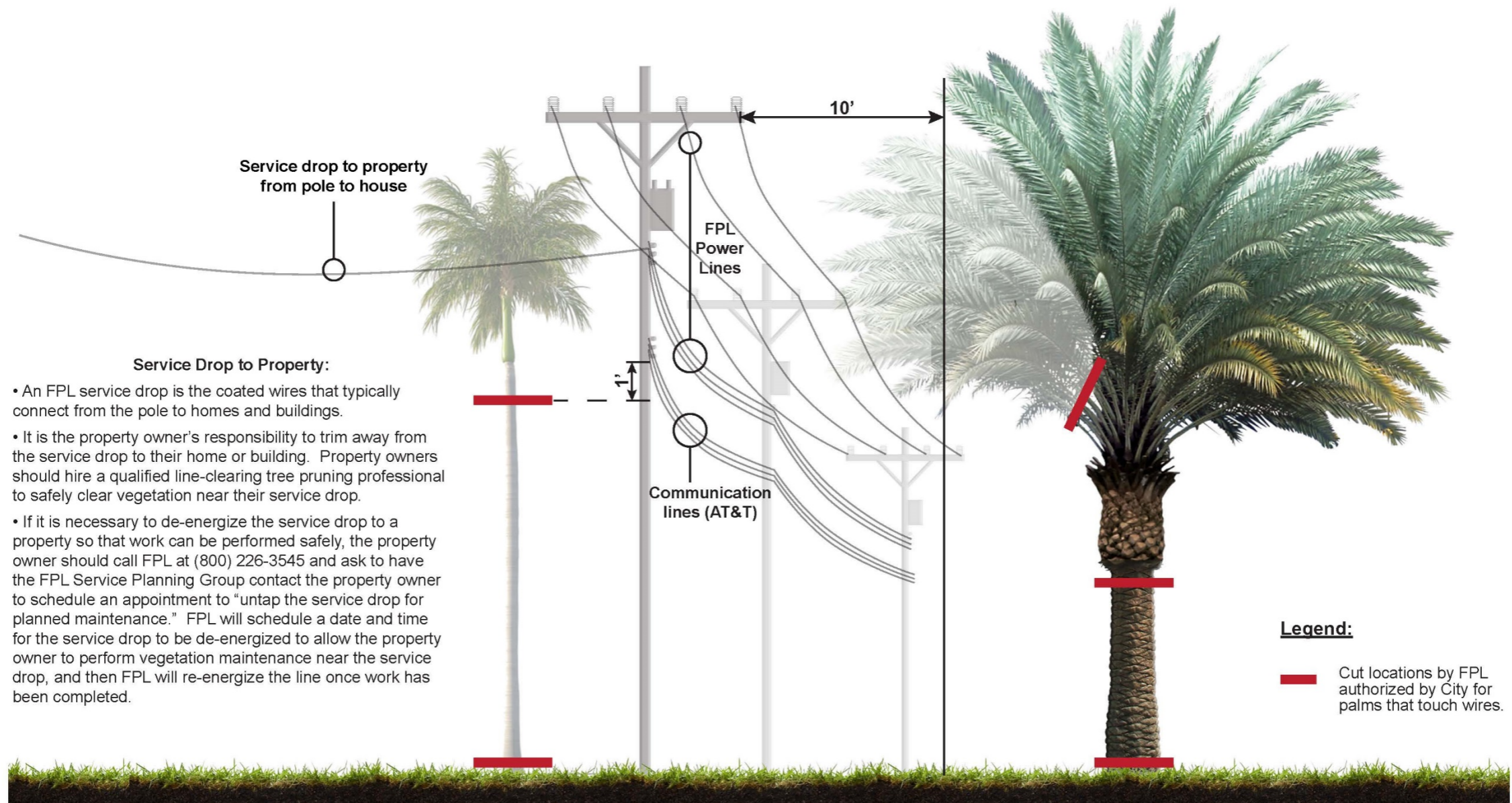
Palms whose fronds touch FPL wires must be removed or relocated by property owner, or FPL will cut to ground level or 1' or more below lowest wire.

SMALL PALMS OR BAMBOO

Once the fronds of a small palm or bamboo make contact with a wire, FPL will have the authority to remove the entire palm to the ground; where cutting the palm to the ground is not feasible, FPL must cut the palm trunk at least 1-foot or more below the lowest wire (AT&T).

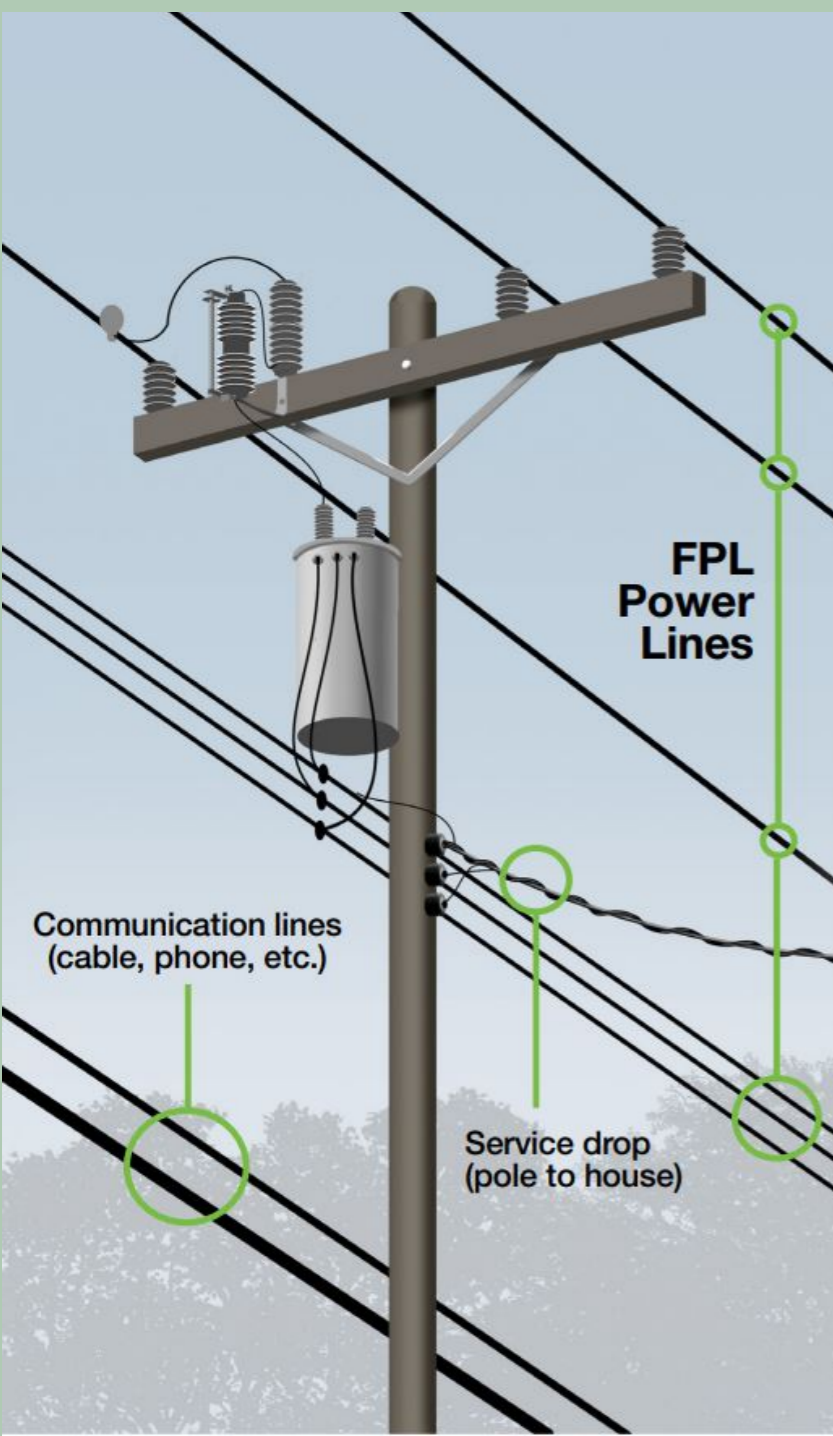
LARGE PALMS

If tree meets certain conditions, FPL will prune palm back to a safe distance of 10' or more away from electrical wires. But if the palm is too close, City will notify property owner to allow the opportunity for the property owner to relocate palm prior to palm removal by FPL



FPL TREE PRUNING PROCEDURES

- Once the fronds of a small palm make contact with a wire, FPL will have authority to remove the entire palm to the ground.
- FPL will take a photo with GPS coordinates and dates of the before and after condition.



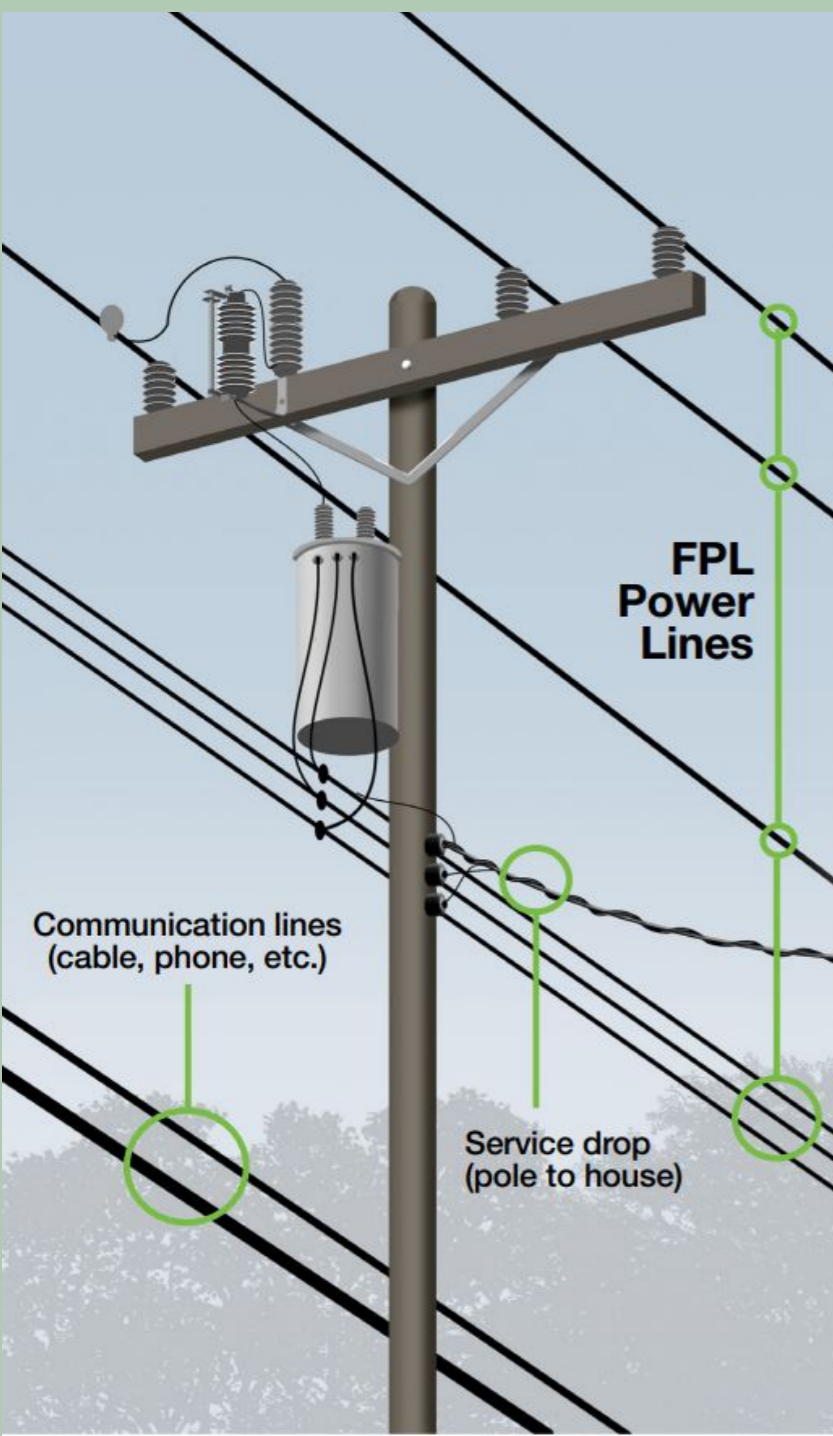
Punto 1:
Título: 30ago.19 15:44
Bird 32 wr 9104649
Ad-hoc
1530 Certosa Ave, Coral Gables, FL 33146, US
30-ago.-19 15:44:39
25.72310, -80.28566
UTM:17n 571657 2845214
MGRS:17RNJ7165745213 (±33ft)
Altitud: 18 (±13ft)
Rumbo: NE71 (±15°V)



Punto 2:
Título: 30ago.19 15:53
Bird 32 wr 9104649
Ad-hoc
1535 Robbia Ave, Coral Gables, FL 33146, US
30-ago.-19 15:53:34
25.72313, -80.28561
UTM:17n 571663 2845216
MGRS:17RNJ7166245216 (±33ft)
Altitud: 28 (±10ft)
Rumbo: NE68 (±15°V)



FPL TREE PRUNING PROCEDURES



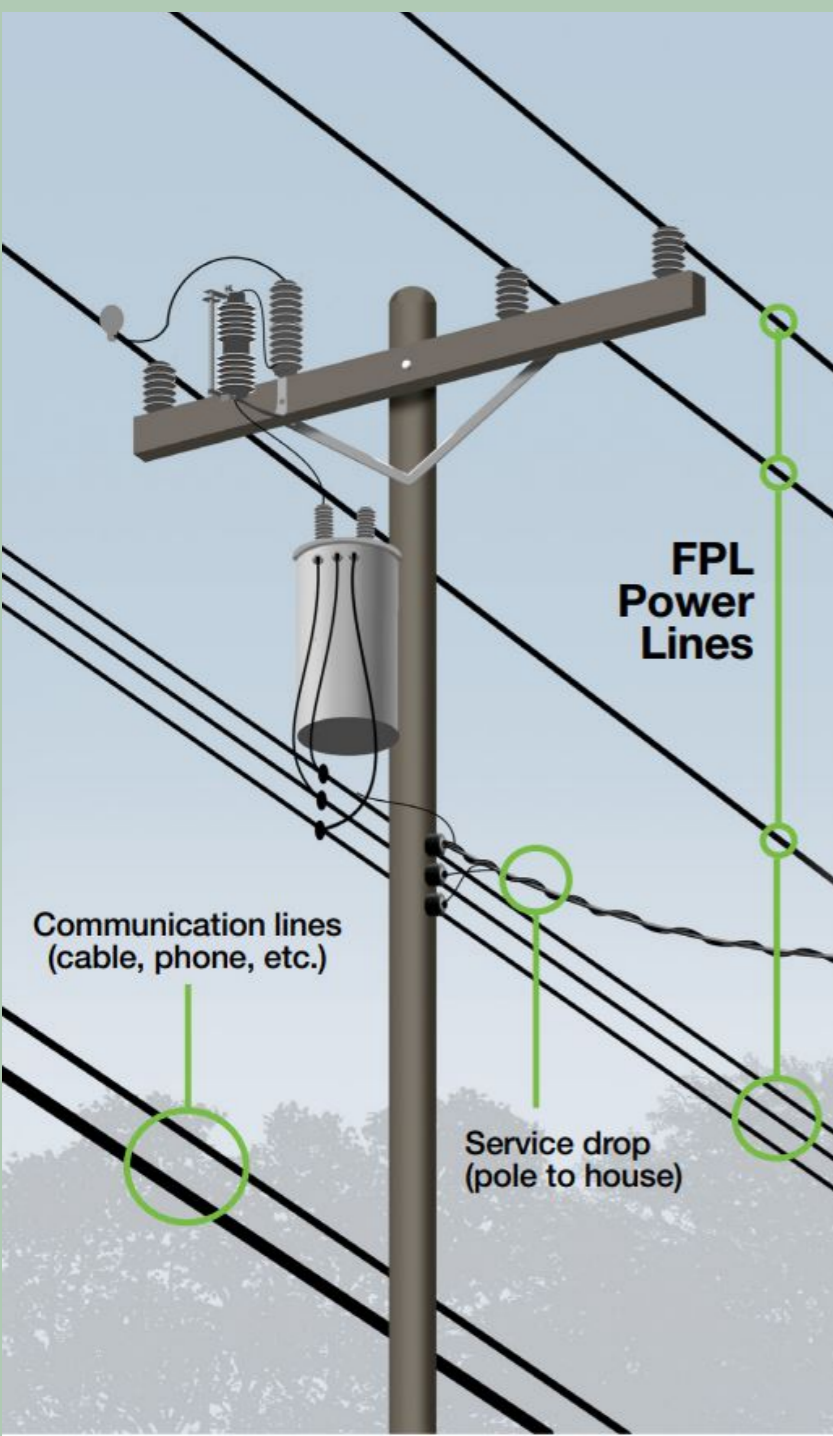
1. When a tree of concern is identified within FPL distribution facilities:

- d) If condition is a large palm, FPL can top below the lowest wire (AT&T).
- Once the fronds of a large palm make contact with a wire, FPL will do the following:
 - FPL will take a photo with GPS coordinates and dates of the before and after condition.
 - FPL will notify the City via e-mail or a mutually agreed upon regular reporting method, and FPL will notify the homeowner with a door hanger.
 - The property owner will have the ability to notify FPL and the City that they are OK with FPL proceeding with the removal of the palm or that the property owner will relocate the palm within a to be determined amount of time.
 - Once the property owner notifies FPL and the City that they are OK with proceeding with the removal, FPL will have authority to remove the entire palm to the ground; where cutting the palm to the ground is not feasible, FPL must cut the palm trunk at least 1-foot or more below the lowest wire (AT&T).
 - CCG Code Enforcement can get involved to cite if needed.
 - Note: The intent of this process is to avoid removing a high value, rare, or sentimental large palm that the property owner would prefer to relocate at their expense rather than have FPL remove to the ground or cut at 1-foot or more below the lowest wire (AT&T).

FPL TREE PRUNING PROCEDURES

- 1. When a tree of concern is identified within FPL distribution facilities:**
 - e) City (when appropriate) can potentially help mitigate costs by:**
 - **Waiving tree removal/relocation permit fee.**
 - **Reducing or eliminating required tree canopy mitigation.**
 - **Hauling away vegetative debris placed on the City swale.**
 - f) City will create door hangers for after the fact notification purposes and explaining vegetation clearing from near FPL lines.**
 - g) If a tree or palm is touching wires, the resident should report using the existing FPL channels.**
 - h) If a small palm caused an outage, FPL will have authority to remove palm for power restoration.**
 - i) If a large palm caused an outage, FPL will need to follow the procedure outlined below; however, the amount of time provided to the resident to notify FPL and the City of their intent to relocate vs. remove the palm may be significantly shortened.**

FPL TREE PRUNING PROCEDURES



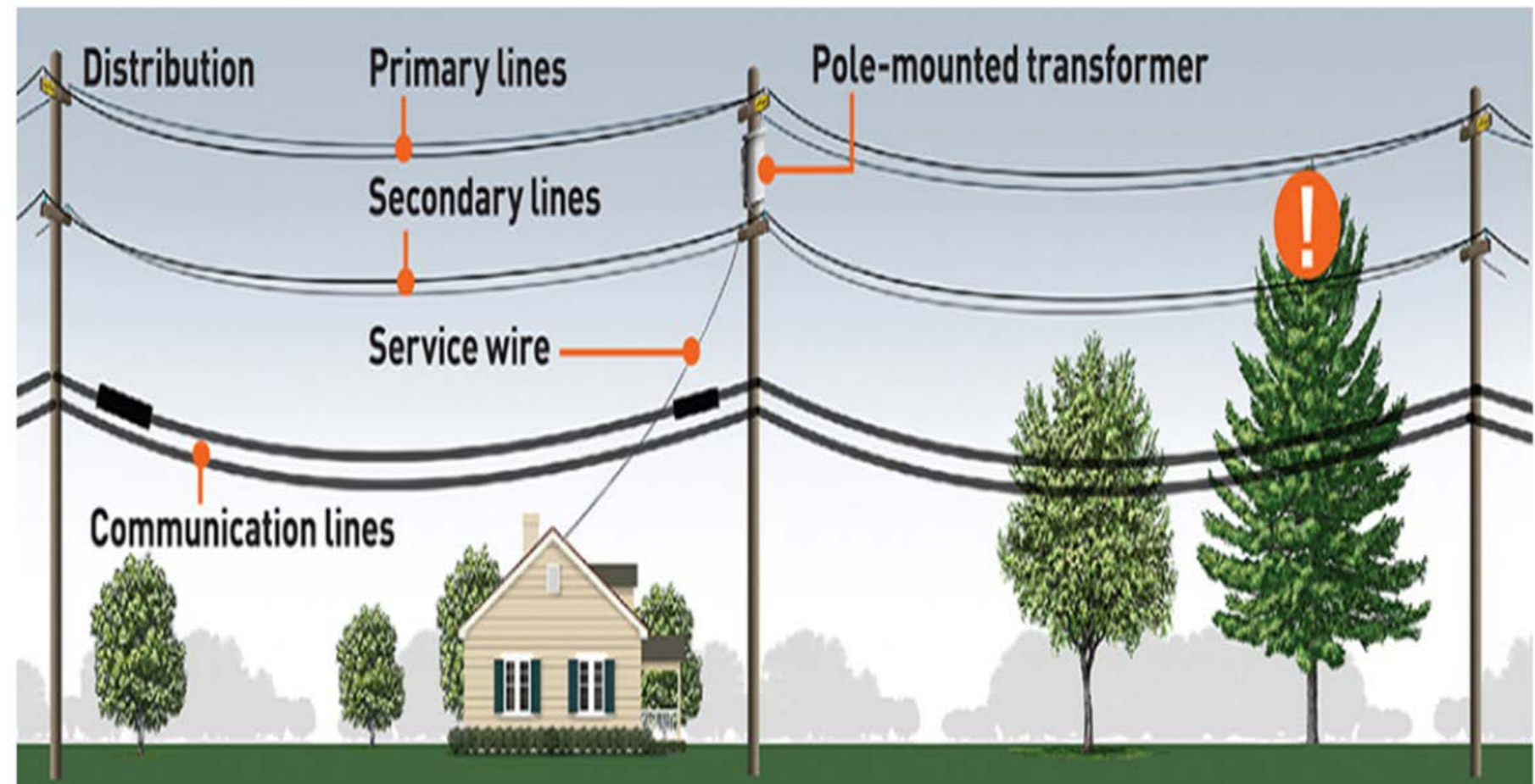
2. Service drop and service line clearance:

- a) For reference, an FPL service drop is the coated wires that typically connect from distribution lines to homes and buildings, and FPL service lines are the coated wires that typically connect from distribution lines to streetlights.
- b) It is the property owner's responsibility to trim away from the service drop to their home or building. Property owners should hire a qualified line-clearing tree pruning professional to safely clear vegetation near their service drop.
- c) If it is necessary to de-energize the service drop to a property so that work can be performed safely, the property owner should call FPL at (800) 226-3545 and ask to have the FPL Service Planning Group contact the property owner to schedule an appointment to "untap the service drop for planned maintenance." FPL will schedule a date and time for the service drop to be de-energized to allow the property owner to perform vegetation maintenance near the service drop, and then FPL will re-energize the line once work has been completed.

FPL TREE PRUNING PROCEDURES

3. Planned maintenance / problem area notification:

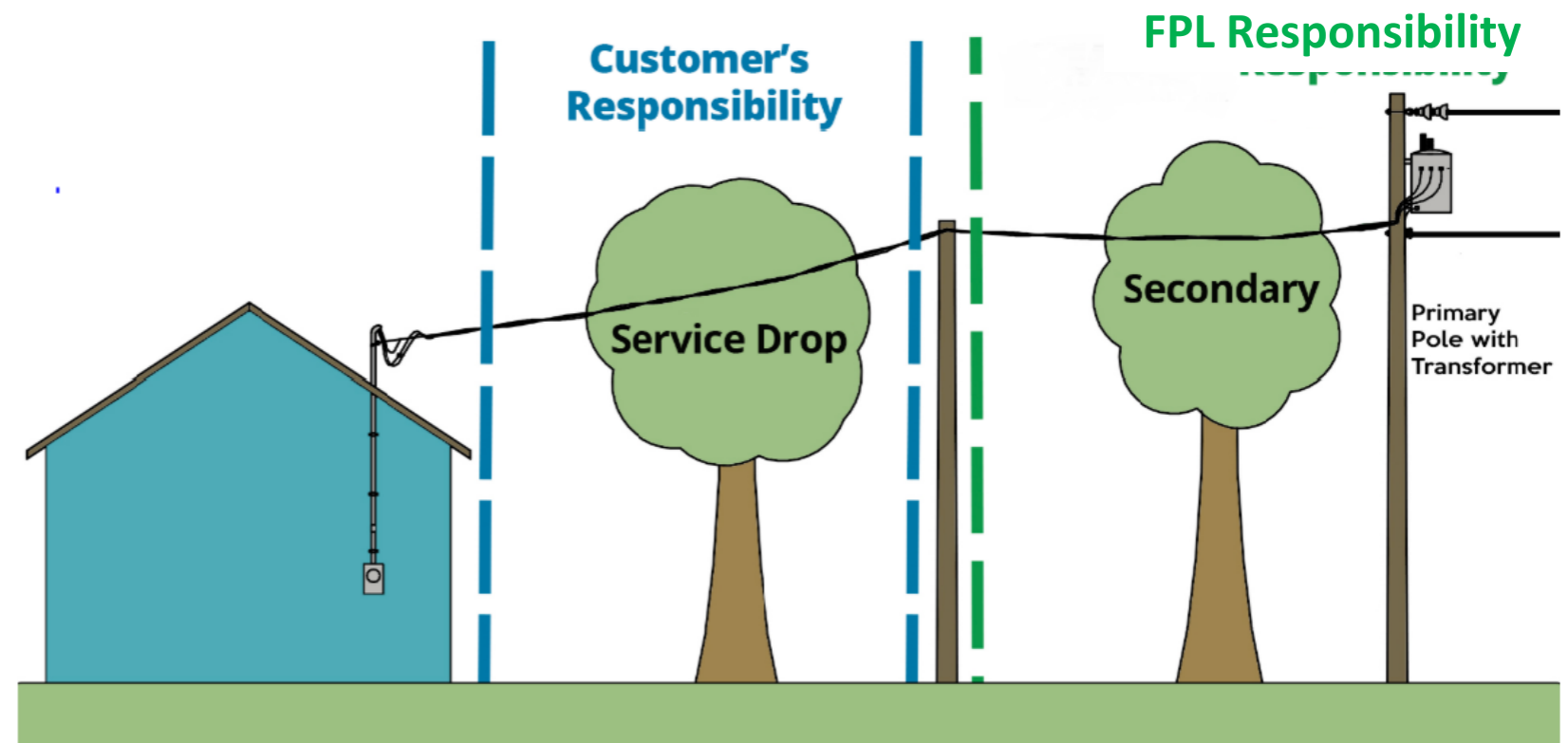
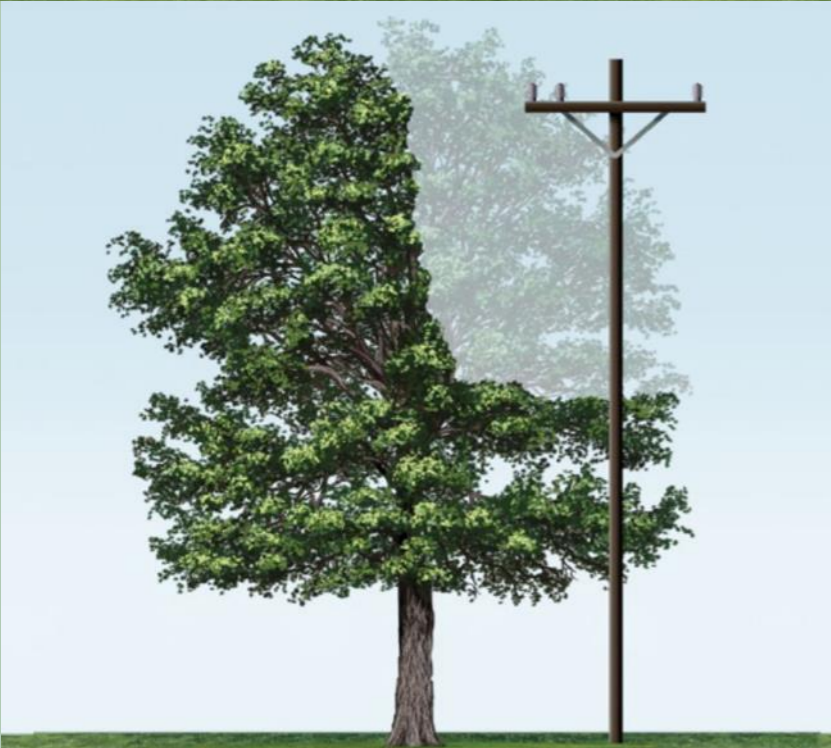
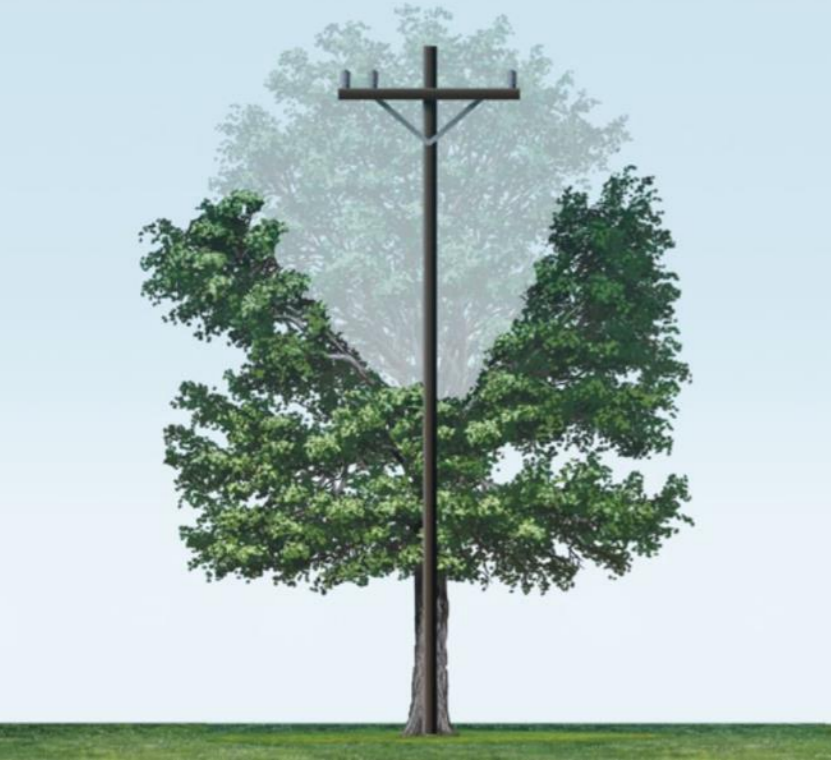
- a) In those cases where FPL trimmers find problem conditions during scheduled maintenance, they are to notify both FPL Vegetation Maintenance (VM) and City of Coral Gables Public Works Department Landscape Services arborists.
- a) At this point the City and FPL will work with the resident on removal and/or mitigation of condition as noted above in #1.



FPL TREE PRUNING PROCEDURES

4. “Make ready” condition / unplanned maintenance:

- a) Upon specific conditions, where the City or a resident reaches out to FPL, and FPL VM identifies a condition where trees are in the FPL easement above or encroaching the secondary wires (typically uncoated wires):
- FPL will evaluate the condition, cut back to “appropriate” clearance (10’ vertical and horizontal), and “make ready” for property owner to contract an arborist to remove and/or reduce canopy.



FPL TREE PRUNING PROCEDURES

5. Debris removal:

- a) **During regular maintenance or restoration conditions, FPL will remove debris.**
- a) **In “make ready” conditions and unplanned maintenance conditions where there is a significant amount of vegetation debris or a tree/palm removal FPL will coordinate work with the CCG and the property owner and will place debris on the City swale area in a safe manner and accessible for City trash cranes to collect.**



FPL TREE PRUNING PROCEDURES

6. Problematic concern conditions:

- a) In the cases where FPL identifies a potential concern condition, FPL will notify City and mark the tree with dot, line, or tag with an agreed upon spray paint or tag, where the final cut will exist. (i.e. non-native, invasive, fruit trees, dead and dying fast growing species).

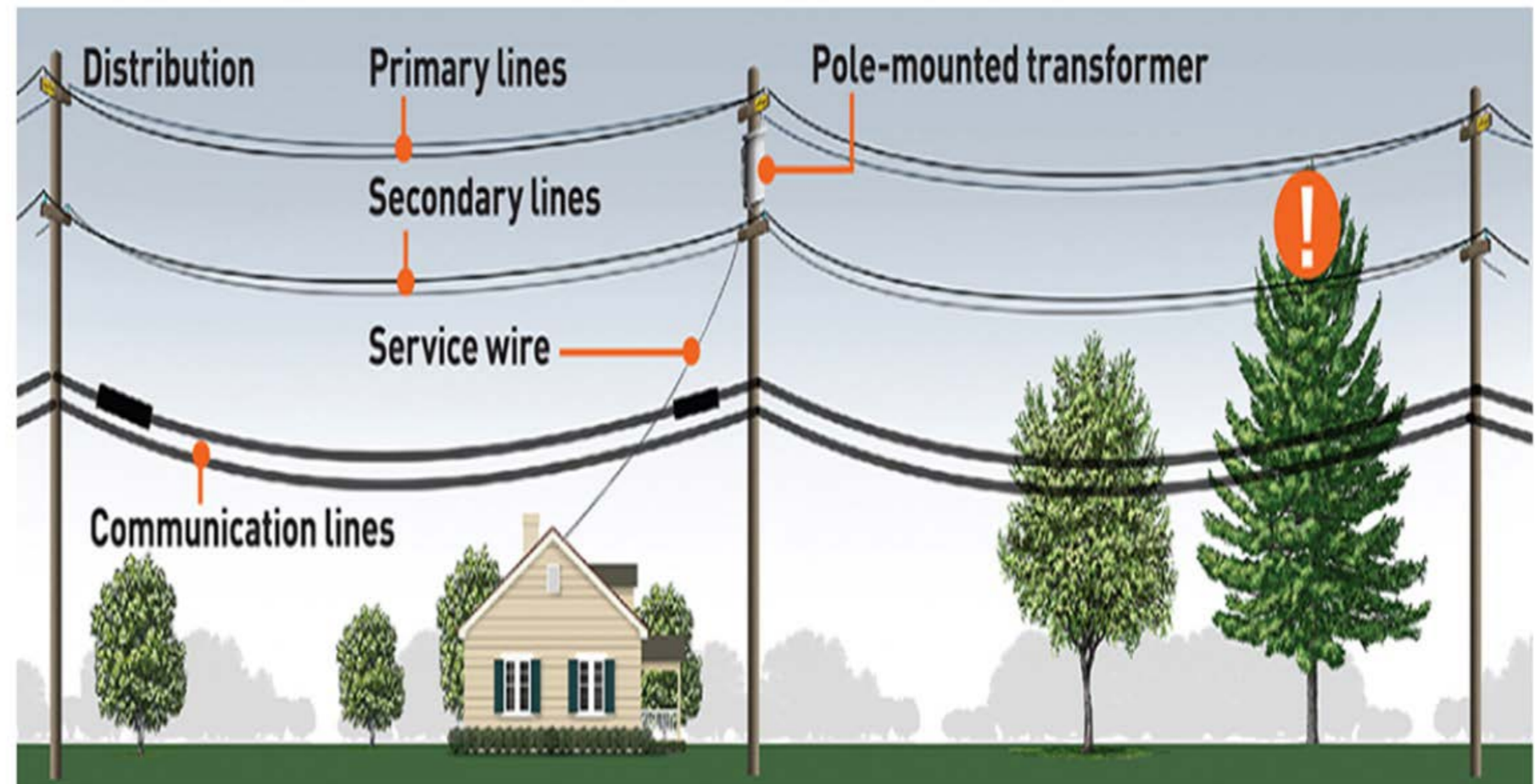
- a) City will leave a door hanger and will coordinate with the property owner, FPL, and Code Enforcement as needed.



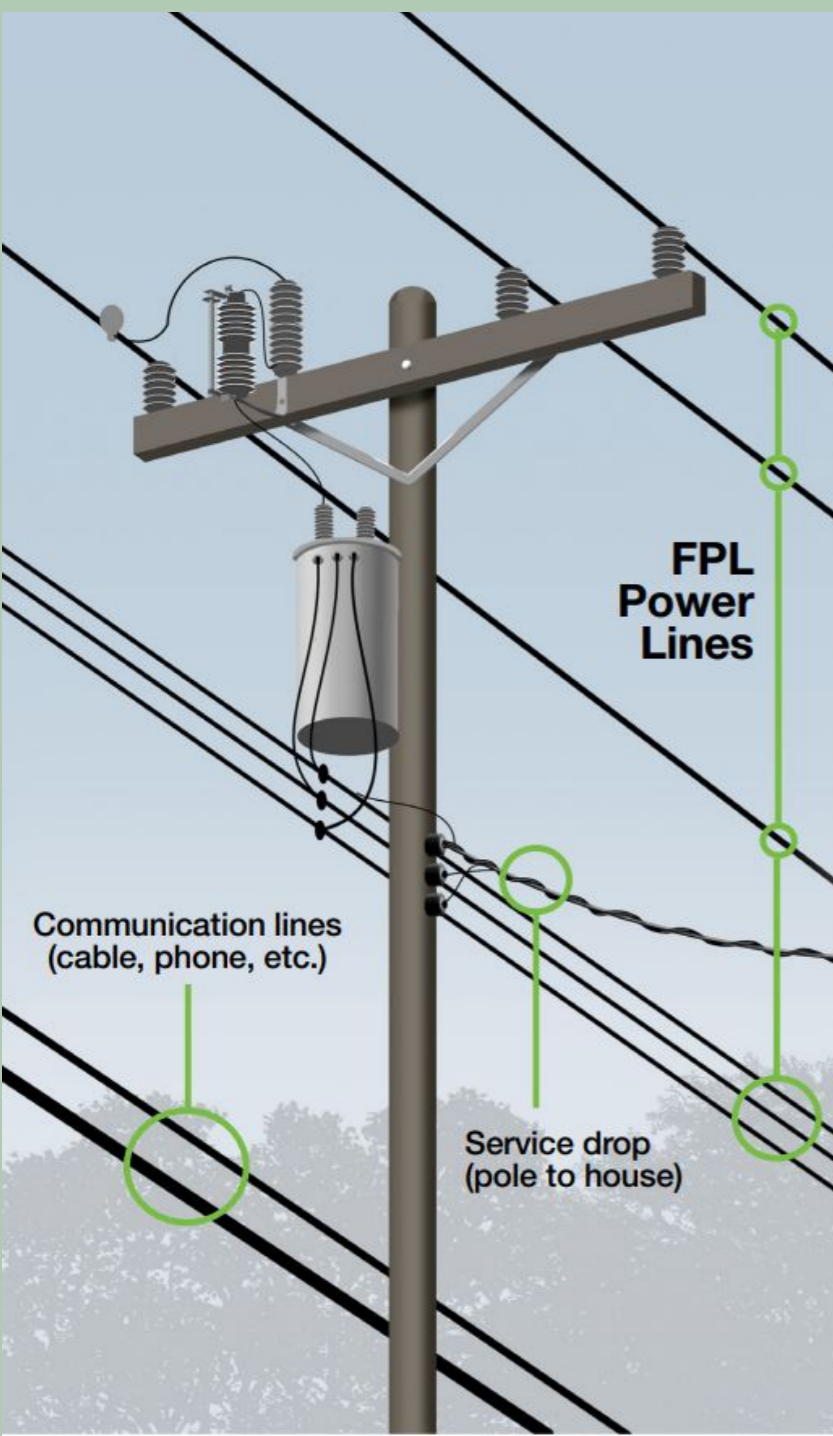
FPL TREE PRUNING PROCEDURES

7. Planting trees under streetlight service line wires:

- a) The City will resume the planting of large trees (i.e. oak trees, large trees) under the service line circuits in the ROW.
- b) City will maintain trees as part of their ongoing citywide tree pruning to avoid contact with the service line wire and/or extreme tension conditions.



FPL TREE PRUNING PROCEDURES



8. Ongoing City tree replacement practices under distribution facilities:

Under FPL distribution facilities (typically uncoated wires), as the existing large canopy trees (i.e. black olive, ficus, royal poinciana, oak, and mahogany) get sick or damaged and are removed, the City proposes to replace them with medium canopy trees (i.e. Bridalveil, Gumbo limbo, Orange geiger, Silver buttonwood, Tabebuia bahamensis, and Cassia bakeriana) and work with FPL to keep them at or below the topmost FPL distribution facilities.

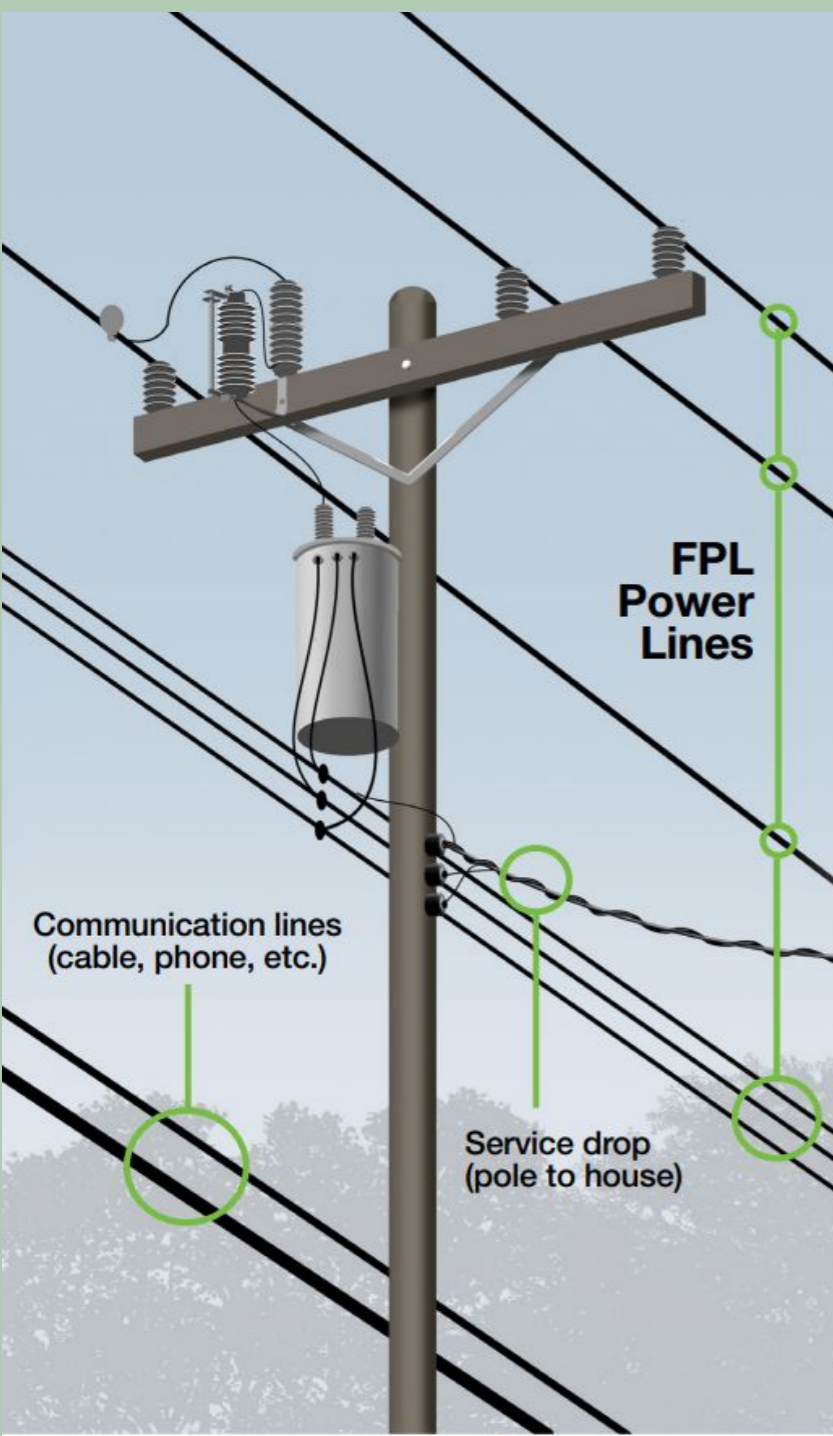
- a) These trees will be maintained by the City, along with FPL.
- b) City vegetation maintenance will be coordinated to be alternating with the FPL VM cycle.
- c) City tree pruning crews will prune the young trees to work towards training the trees away from FPL lines.

FPL TREE PRUNING PROCEDURES

9. City new large canopy tree planting under FPL distribution facilities:

a) In those cases where there are new plantings of large canopy trees in wide swales within the ROW under FPL distribution facilities:

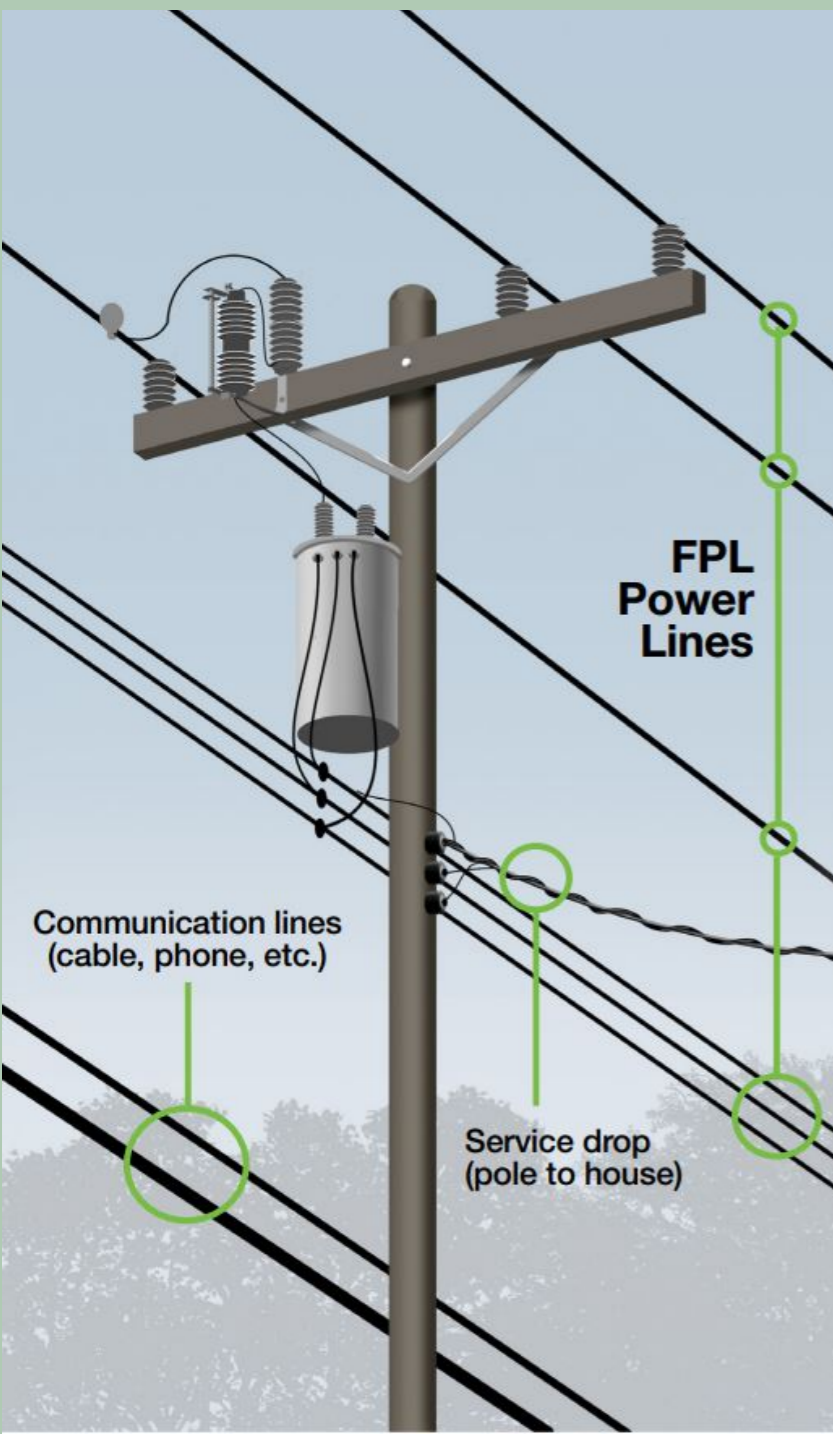
- City will have a field meeting with FPL VM prior to planting.
- City and FPL will coordinate and come to an agreement on the planting location of the new tree.



FPL TREE PRUNING PROCEDURES

10. Work planning:

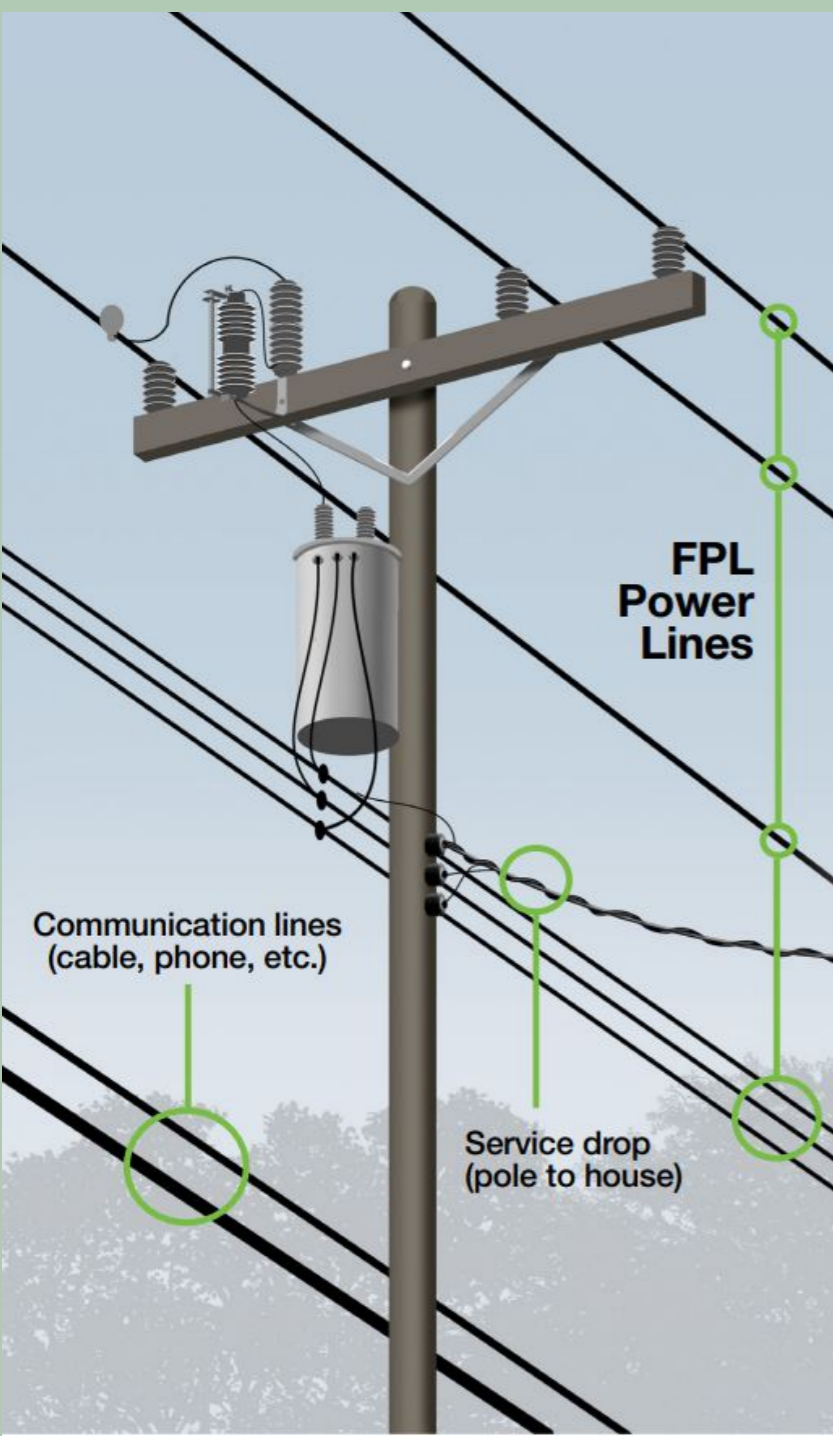
- a) FPL will evaluate the potential pre-planning of VM work to coincide with scheduled / routine maintenance outside of standard cycles.



FPL TREE PRUNING PROCEDURES

11. New construction landscape plans:

- a) City will try to catch inappropriate tree plantings near FPL facilities during the plan review.
- b) City inspectors will try to evaluate landscaping planted nearby FPL lines before closing building permit. (The City currently does not have a City landscape inspector, but the City has created and is looking to fill a part-time landscape inspector position.)



Questions?

Public Works – Landscape Services Division

305-460-5135

trees@coralgables.com

coralgables.com/landscape-services

CORAL
GABLES
THE CITY BEAUTIFUL