



State of the Forest End FY2021

The Annual Internal Report on the
City of Tampa Parks and Recreation – Forestry Division Program

11/23/2021

Prepared by:

Eric Muecke, R.F.

Urban Forestry Manager, Parks and Recreation Department

NC Registered Forester 1673, ISA Certified Arborist IL-0709, TRAQ Qualified

City of Tampa / 3402 W. Columbus Drive / Tampa, Florida 33607

p: (813)-274-5137 /e: Eric.Muecke@tampagov.net

Visit us on the web at www.tampagov.net/ParksandRec



End FY2021 Urban Forestry Division Status

Summary

The City of Tampa lacks a public tree ordinance authorizing the Forestry Division to determine the planting, maintenance, and removal of trees in the public right-of-way and parks. Instead, in Chapter 27 Zoning and Development, the Forestry Division receives an exemption from obtaining permits for:

- Pruning (limb/root) of any protected or grand tree on public land or public right-of-way,
- Removal of any protected tree or hazardous/dangerous grand tree, to mitigate any potential risk to the safety of the general public, on public lands or public rights-of-way.

(Sec. 27-284.1.3. - Other exemptions)

The “urban forest”, for this report, means the street trees (or right-of-way trees) and the park trees.

Services Provided by the Forestry Division

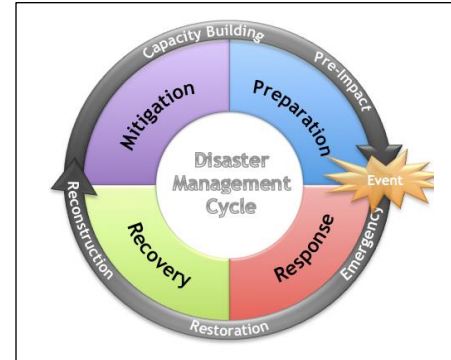
- Primary goal: maintain a safe, healthy, and expanding urban forest canopy
- 24/7 response to emergency tree failures on streets and parks **(54% of in-house workload, 923 emergency responses in FY2021)**
- Plant, prune, maintain, and remove right-of-way trees (1,400 miles + medians)
- The Tree-mendous Tampa Program is free and provides individuals and neighborhood associations with trees planted on City street rights-of-way (2 per year if adequate space). Contracted at approximately \$87.5K annually from the Tree Trust Fund
- Pruning, maintenance, and removal of park trees in 194 parks, greenways, green spaces and cemeteries
- Insect and Disease monitoring and management
- 17 personnel, including 4 certified arborists (CA)
 - Manager (CA)
 - TreeMendous Tampa Project Specialist
 - Contract Monitor (CA)
 - Site Supervisor (CA)
 - 2 Service Crew Leader III (CA) – site inspectors
 - 3 Service Crew Leader II
 - 2 Automotive Equipment Operator II
 - 6 Tree Trimmer II
- Utilize contracted services for large projects, storm damage, special populations, area tree maintenance, stump removal, and tree removals. **Prior to FY2019 funded at \$100K annually. FY2019, \$450K; FY2020-21, \$465K; FY2022, \$545K (anticipated).**

Due to the inefficient results of responding to individual service requests, it is recommended that Tampa incorporate an Area Management Teams to reduce the number of tree-related emergencies, address the maintenance needs of street and park trees, and reduce the amount of incoming requests. This is addressed in the 2021 Forestry Division Strategic Plan.

Area Management Teams (Best Management Practices)

All street and park trees should be inspected and maintained on a cycle. **Without a street tree inventory, the cycle cannot be determined.** The Goals for maintenance would be:

1. Healthy street and park trees:
 - a. Raise the canopy for eventual permanent 16-foot clearance over the road and a balanced canopy over the sidewalk
 - b. Remove all deadwood greater than four-inch diameter
 - c. Structural prune weak attachments and co-dominant stems
 - d. Directional and Crown reduction pruning for clearance (house, street light, street sign, line of sight, athletic field, etc.)
 - e. Training pruning of young trees
2. Identify dead and dying trees and schedule removal, stump removal and evaluate for replacement.
3. All of this work would be considered Mitigation in the Disaster Management Cycle. **This would lead to greater Preparation, a more efficient Response, and a faster Recovery.**



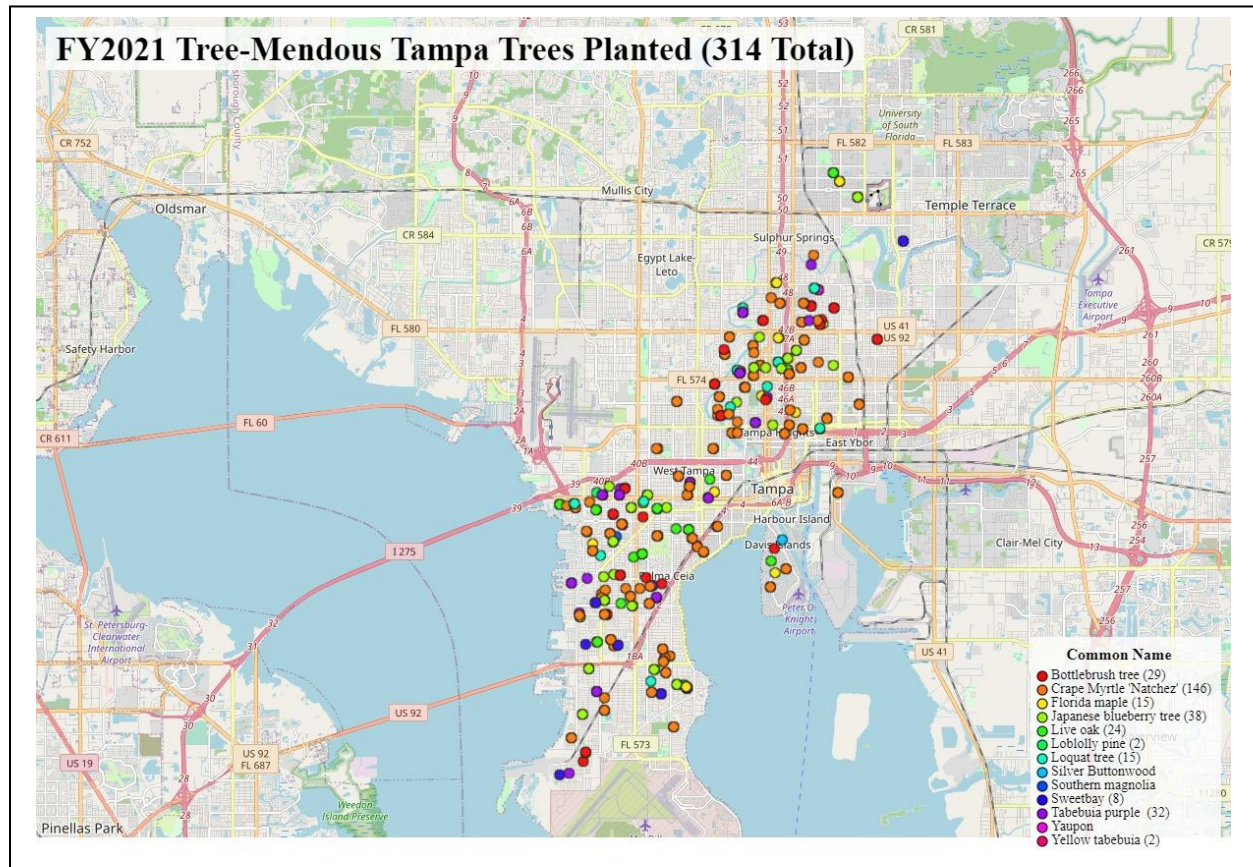
This would provide:

- The City's street and park trees would be pruned on a cycle, decreasing service requests
- A reduction in emergency responses
- More resiliency in the tree population to survive insect/disease outbreak, hurricanes, and storms
- A reduction in tree risk and liability

The Administration has reorganized Development & Growth Management, realigned the Neighborhood and Community Affairs Administration, and established a new Sustainability and Resilience Officer. The Urban Forest Canopy analysis is underway in 2021. The City should use this time to gather information, determine how it plans to improve the street and park tree populations, and update the Urban Forest Management Plan with the Natural Resources Advisory Committee and Internal Technical Work Group.

Tampa has spent well over 40 years focused on tree preservation and not tree maintenance. It will take many years to bring the Urban Forestry maintenance program up to date and proactive in the management of our natural resource.

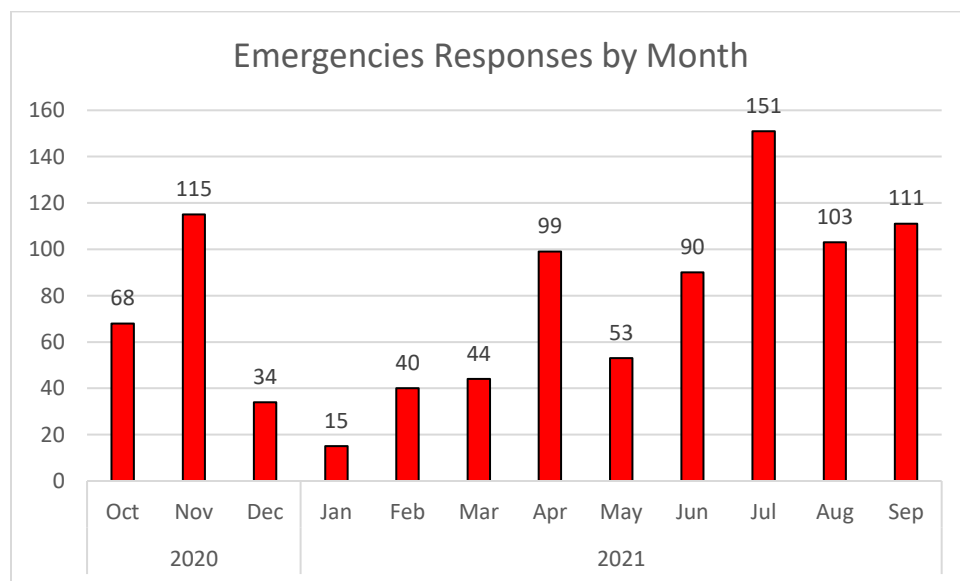
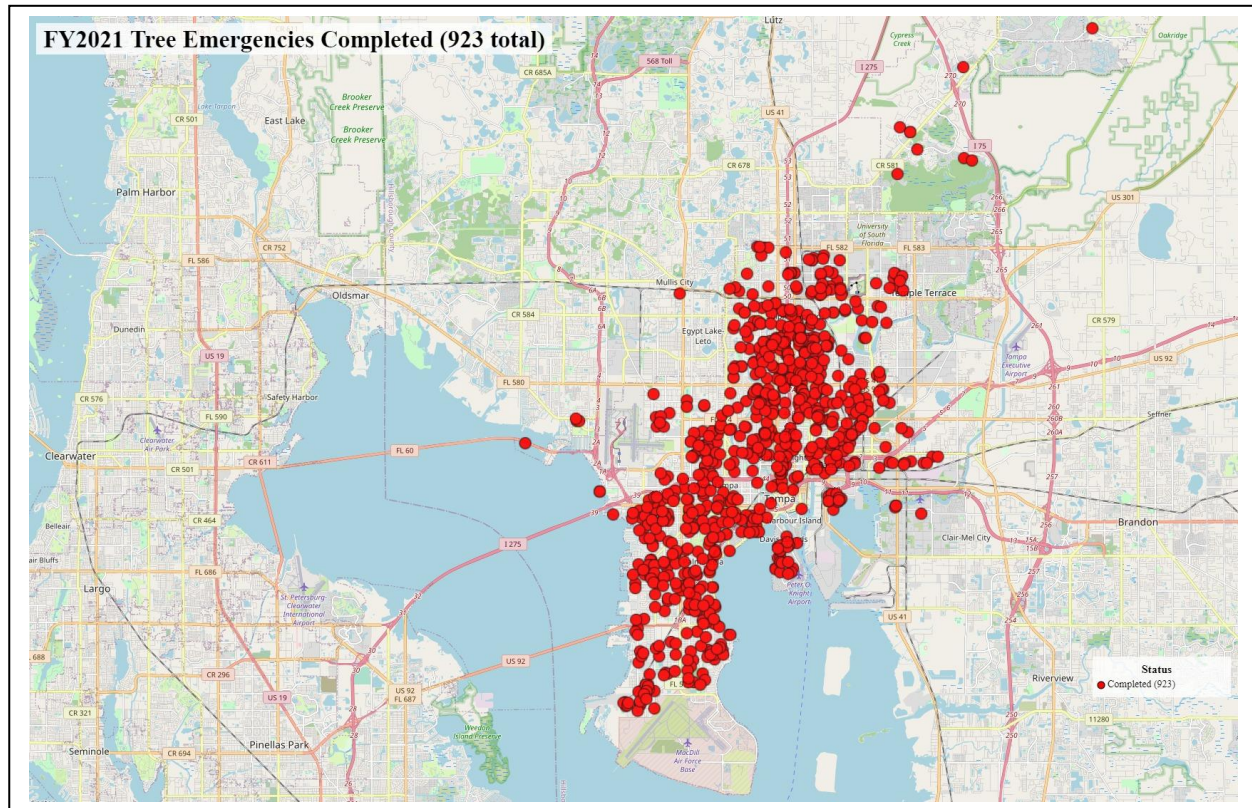
TreeMendous Tampa Program FY2021



Common Name	Count
Crape Myrtle 'Natchez'	146
Japanese blueberry tree	38
Tabebuia purple	32
Bottlebrush tree	29
Live oak	24
Loquat tree	15
Florida maple	15
Sweetbay	8
Loblolly pine	2
Yellow tabebuia	2
Silver Buttonwood	1
Yaupon	1
Southern magnolia	1

The Forestry Division Tree-Mendous Tampa tree planting program provided 314 trees (\$87k) to residents that were willing to provide watering for 1 year. Residents are allowed to choose their species and are only required to choose utility appropriate species when overhead utilities are present. **Most residents choose trees based on mature size and aesthetics rather than the economic, environmental and social benefits. This leads to a decrease in Canopy.**

Completed Emergency Work Orders



* Tropical Storm Eta in November 2020, April 10 storm 2021, Hurricane Elsa in July 2021

In FY2021, Forestry responded to 923 emergencies, accounting for 54% of work orders completed.

What is an Emergency?

- Trees in the right-of-way that experience branch or tree failure. These failures may affect the public right-of-way or private property.
- Trees in the City parks that experience branch or tree failure. These failures may affect a City park or private property.
- Trees on private property that experience branch or tree failure affecting the public right-of-way or City parks.
- Trucks and/or City vehicles stuck under low leads or that have knocked down limbs.
- Vehicle accidents involving trees and the public right-of-way.

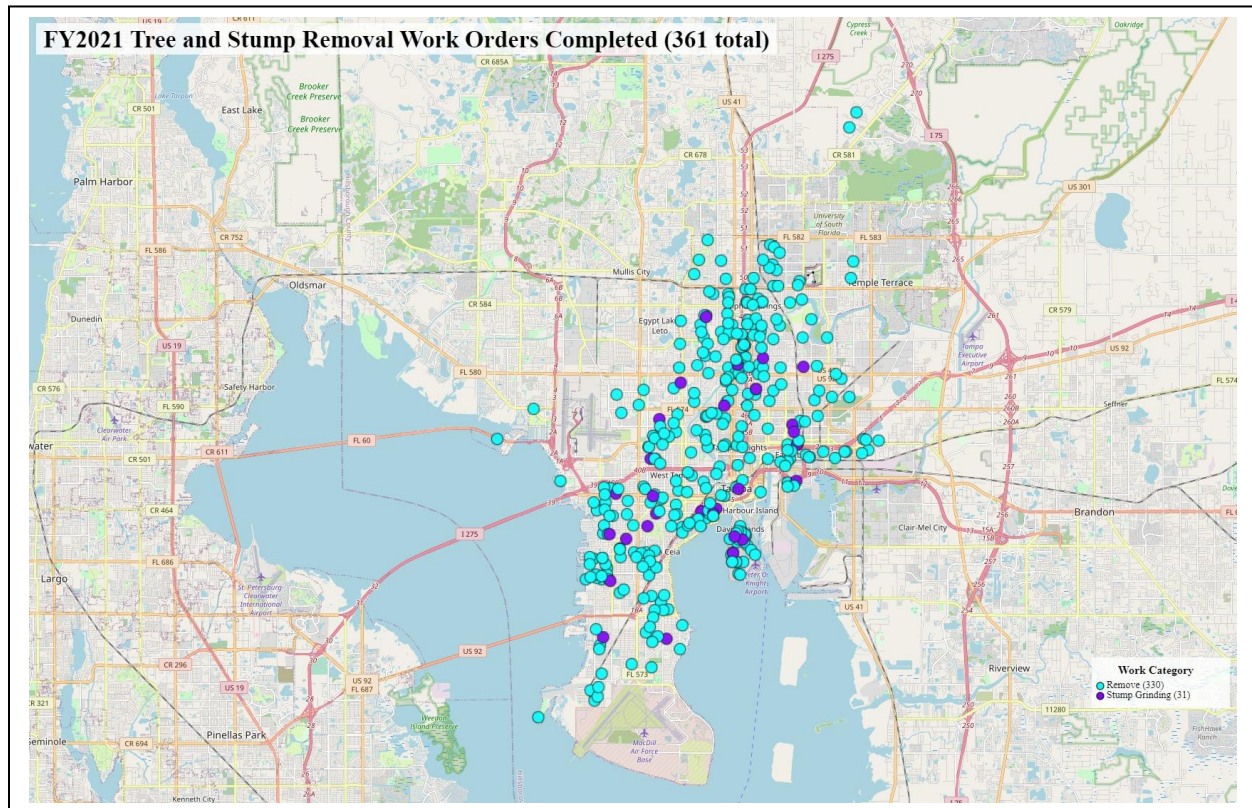
What is the Forestry Response?

- Weekdays – Forestry crews are re-directed from pruning and removal projects to provide response.
- Nights and Weekends – A 2-person forestry crew is on call (7:00am – 11:30pm) and responds to clear the road. The debris is stacked in the right-of-way to be picked up on the next scheduled workday. There is no recognized on-call crew 11:30pm – 7:00am.
- Use of Contractors – large-scale park cleanup projects are contracted out due to Forestry staffing. Technical removals involving a crane are contracted.
 - Hurricane Elsa park cleanup - \$31,850
 - Jackson Heights Cemetery cleanup - \$42,270

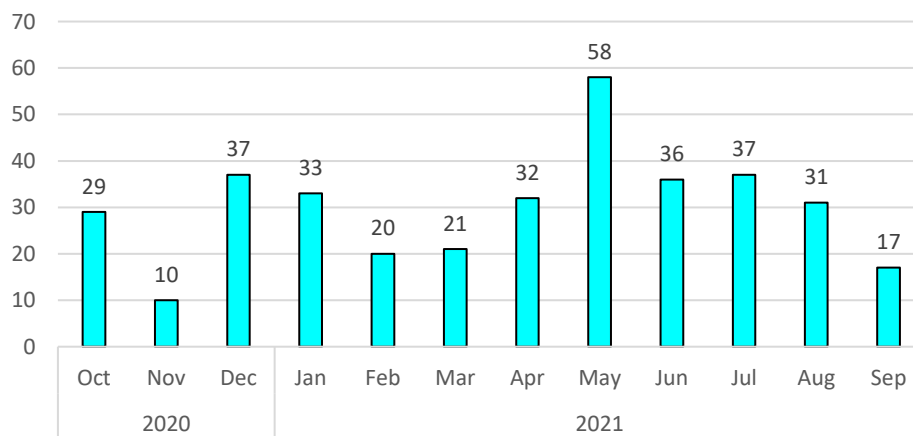
What are the implications?

- **Staff is too busy responding to emergencies to address pruning and removal requests during storm season.**
- Forestry inspections take 4-6 weeks during storm season due to responding to emergencies.
- Forestry does not provide an estimate for work completion during storm season.
- Risk Management deals with numerous claims annually due to public tree failure damage to private property (44 claims FY2021).
- Significant backlog of work orders starting FY 2022 (424 open work orders).

Completed Tree Removal/Stump Removal Work Orders



**Tree and stump Removal work orders completed
by month**



In FY2021, Forestry completed 361 tree and stump removal work orders.

Why are trees removed?

- Trees that are dead, dying, diseased
- Trees that are structurally compromised
- Trees that have experienced significant failures
- Trees that present a high risk of failure

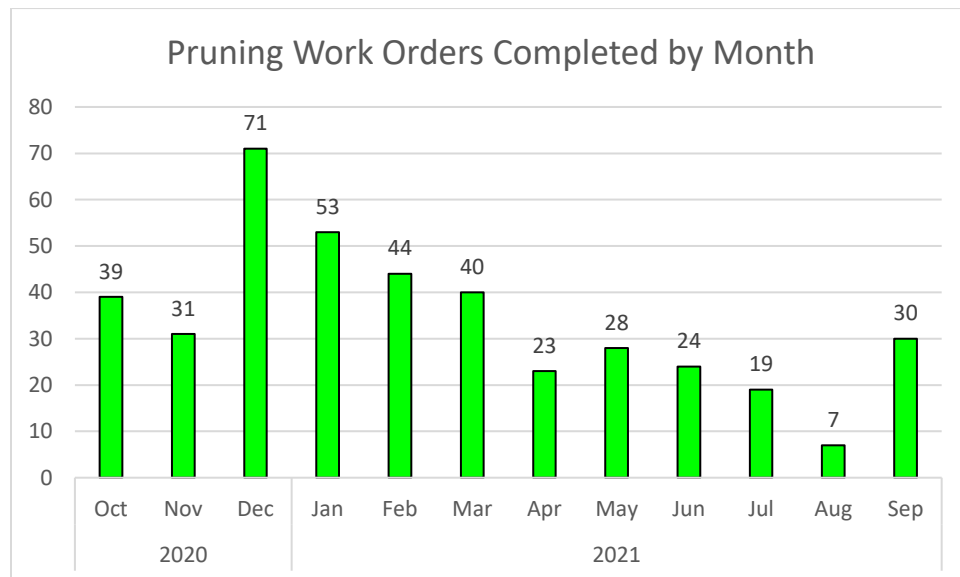
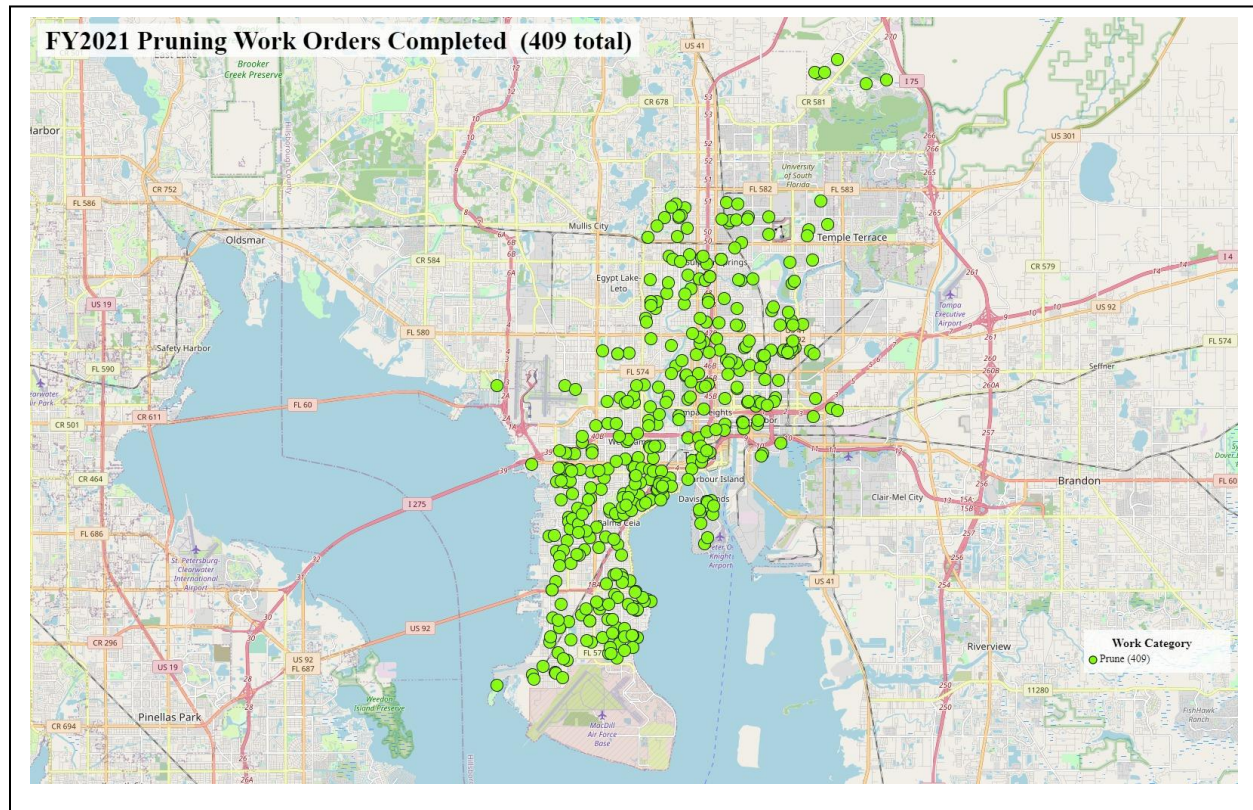
What is the Forestry Response?

- One Forestry crew is available to perform tree removals outside of storm season
- The Forestry Divisions also utilizes contractors for tree removals:
 - Removals requiring a crane are contracted out
 - Three contractors removed 195 trees FY2021
 - The cost of removals was \$248,186.25
 - This averages \$1,272.75 per tree

What are the implications?

- **Equipment age and condition is affecting the ability to operate a removal crew and address necessary removals.**
- Strict tree preservation guidelines have increased the number of overmature/senescent trees in the public right-of-way and parks.
- **Trees often experience storm damage and significant failure prior to removal.** 44 incidents documented by Human Resources Claims for damage to personal property including fences, vehicles and houses.
- Once scared by large tree failure, adjacent residents prefer to replace old, large tree species with a smaller growing species as a way of reducing fear. **This has a negative impact on the overall tree canopy and the associated environmental, economic, and social benefits.**

Completed Pruning Work Orders



In FY2021, Forestry completed 409 pruning work orders.

What are the reasons that pruning work orders are generated?

- Trees in the right-of-way that obstruct vehicular/pedestrian traffic.
- Trees in the right-of-way that obstruct traffic control devices and vision.
- Trees in the right-of-way that have conflicts with houses, streetlights, and other infrastructure.
- Park trees that have branch conflicts with infrastructure including, but not limited to, buildings, lighting, playground structures, athletic facilities, trail and path clearance, etc.
- Street or Park trees with significant dead branches.
- Private vegetation causing sidewalk/pedestrian obstruction, street obstruction, or a sight obstruction.

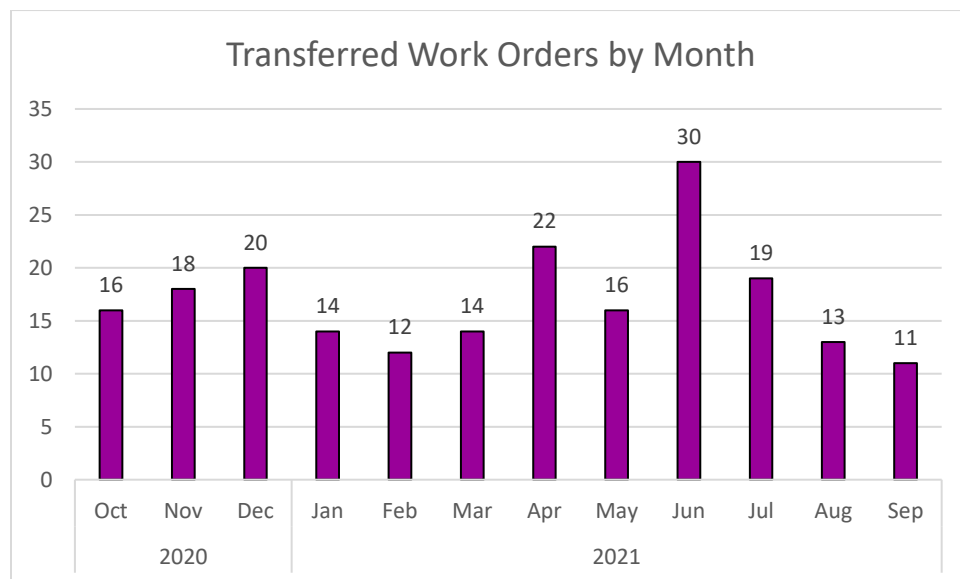
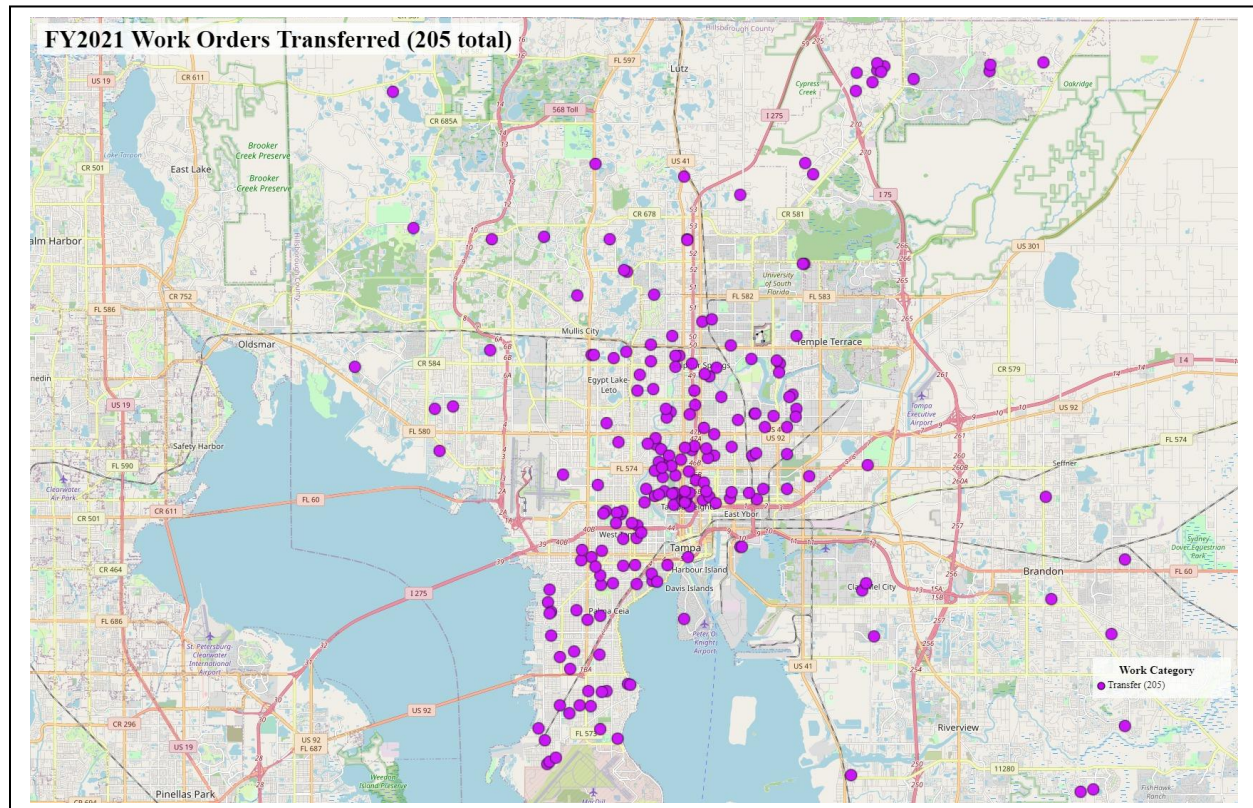
What is the Forestry Response?

- Use of Contractors – large-scale pruning projects are contracted out due to Forestry staffing.
 - Asbury neighborhood – 133 trees; \$46,577.00
 - Ashley Oaks for Super Bowl – 21 trees; \$21,090.00
 - Ybor City Palm project before holiday season – 520 palms; \$26,006.00
- TECO and their contractors are Line Clearance Certified. They are the only ones allowed to work within 10 feet of any overhead utility by ANSI standards.
- 2-Person forestry crew for 1-6 tree projects.
 - Crew size expands as the number of trees increases, or traffic safety concerns increase.
- Private property issues are the resident's responsibility by City Ordinance Chapters 19 and 22

What are the implications?

- Equipment age and condition is affecting the ability to operate a large pruning crew.
- Without a street tree inventory, the City is unable to determine how many trees need to be pruned annually to develop a tree pruning cycle.
- **The First Key to Urban Forest Resilience is diversity of species. Maintenance pruning is the second key to sustainability and resilience. Maintenance pruning reduces risk, mitigates failure, improves right-of-way clearance, and allows for quicker identification of disease and insect outbreaks.**

Work Orders Transferred to Other Entities



In FY2021, Forestry transferred 205 work orders.

Why are work orders transferred?

The City of Tampa lacks a public tree ordinance authorizing the Forestry Division to determine the planting, maintenance, and removal of trees in the public right-of-way and parks. Instead, in Chapter 27 Zoning and Development, the Forestry Division receives an exemption from obtaining permits for pruning (limb/root) of any protected or grand tree on public land or public right-of-way; and removal of any protected tree or hazardous/dangerous grand tree, to mitigate any potential risk to the safety of the general public, on public lands or public rights-of-way. (*Sec. 27-284.1.3. - Other exemptions*)

Common reasons for transfer include, but not limited to:

- Neighborhood Enhancement – The Bright Lights, Safe Nights program designated alleyways, stop sign clearance, street light clearance, and City owned vacant lots to Neighborhood Enhancement
- County – County road trees
- TECO – utility line clearance – TECO only does pole to pole electric service. They do not clear other communication lines or the service line from the pole to a structure.
- Stormwater – trees in designated drainage facilities
- Mobility – healthy street trees with roots heaving sidewalks, driveways, or curb and gutter.
- Water Department – healthy street tree roots conflicting with the water meter
- Areas where the Community Development District (CDD) or Homeowner’s Association (HOA) has designated the responsibility for street trees
- Calls from residents outside the City Limits
- Maintenance Agreements – Downtown trees that are to be maintained by the adjoining property

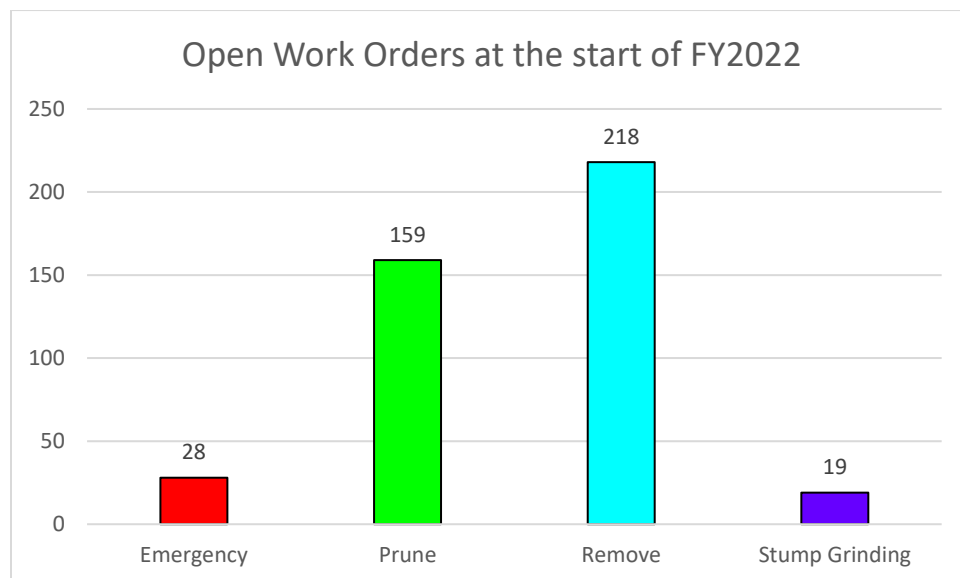
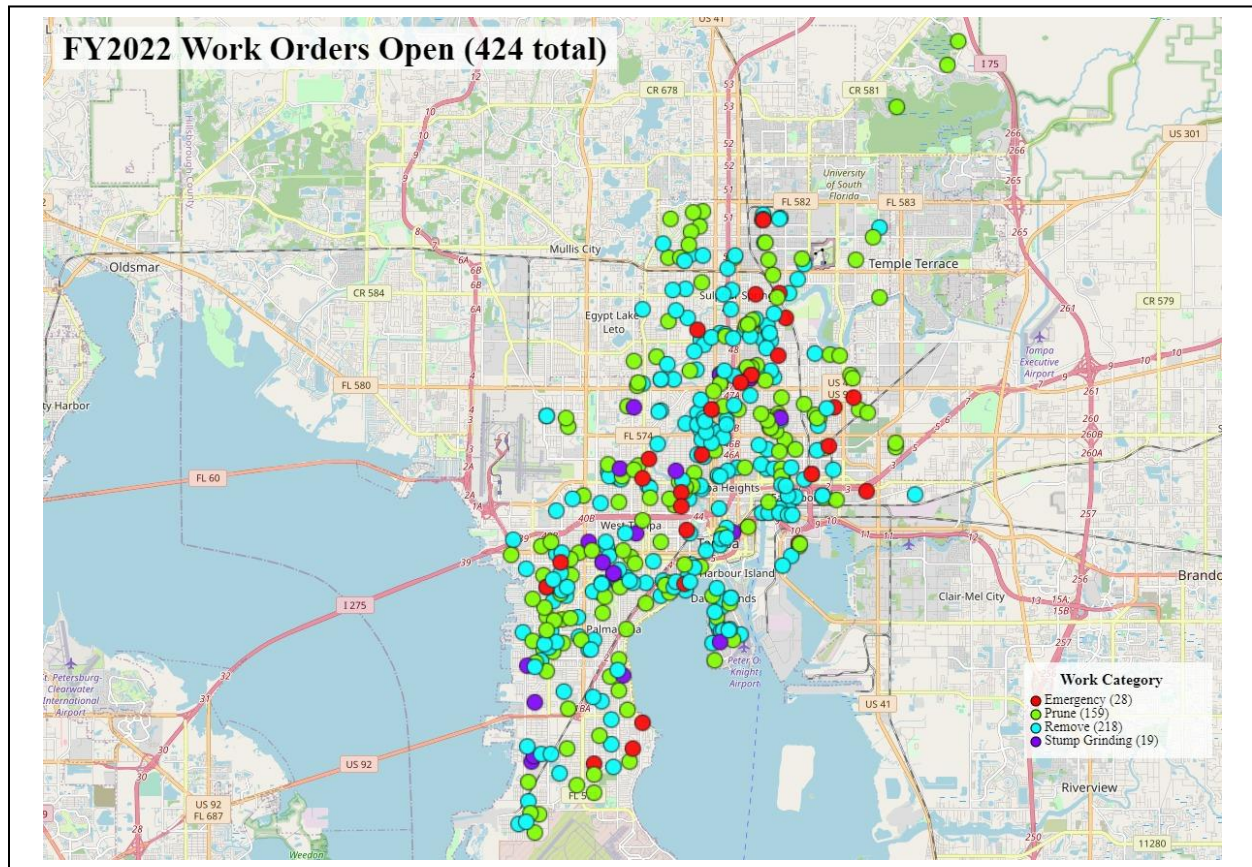
What is the Forestry Response?

- The Forestry Division tries to facilitate communication between the requestor and the proper authority.

What are the implications?

- **The overwhelming distribution of tree authority, both public and private, has created a web of confusion for residents and City Departments alike.**

Open Work Orders



At the start of FY2022, Forestry began with a back log of 424 work orders.

What is the main cause of the backlog?

The main cause of the backlog is the number of tree failures that occur during storm season (June through November). Forestry Crews are called off projects to tend to tree emergencies affecting City streets and Parks.

What is the Forestry Response?

- **During storm season (June – November) Forestry staff is too busy responding to emergencies to address pruning and removal requests.**
- Forestry inspections take 4-6 weeks during storm season due to responding to emergencies.
- Forestry does not provide an estimate for work completion during storm season.
- Most non-emergency work completed by Forestry staff is limited to December through May
- Large projects are contracted out including neighborhoods, long stretches of roads, and Park pruning projects
- Mobility, Stormwater, Logistics and Asset Management, and Solid Waste are utilizing the Citywide Tree contract to prune street trees to meet the clearance needs of their individual departments. This includes, but is not limited to:
 - Traffic control clearance
 - Drainage ditch and stormwater pond tree maintenance
 - Vehicle clearance
 - Parking lot and City Facility clearance

What are the implications?

Until the Forestry Division is staffed and funded to proactively manage the street and park tree populations, the amount of tree failures will continue to affect the number of backlogged requests. The 2021 Urban Forestry Strategic Plan was developed to identify and resolve the program's issues.

What do other communities do? (<https://worldpopulationreview.com/us-cities>)

Tampa is the 47th largest city in the United States with a population of 404k people (2021). An online review of 37th ranked Atlanta, Georgia (524k) to 57th ranked Honolulu, Hawaii (341k) urban forestry programs reveals a diverse urban forestry management spectrum. The management classifications are best described as:

1. Proactive – **Wichita, Kansas and Honolulu, Hawaii**
 - a. Highly educated/certified professional staff
 - b. Up to date street tree inventory
 - c. Systematic (Cycle/Area) pruning and planting
 - d. Annual City-wide Inspections for poor category trees
 - e. Risk management program
 - f. Post planting tree care (watering, staking, mulching, replacement)
 - g. Resident requests are less than 20% of the workload
2. Systematic Reactive – **Aurora, Colorado**
 - a. Street tree inventory may be old or out of date
 - b. Systematic pruning cycle exceeding 10 years
 - c. No Annual City-wide Inspections for poor category trees
 - d. Risk management program has to prioritize based on severity
 - e. Resident requests drive over 40% of the workload
3. Reactive – **Cleveland, Ohio**
 - a. No street tree inventory
 - b. No systematic pruning cycle
 - c. Management by crisis – emerald ash borer infestation
 - d. Resident requests drive over 60% of the workload
 - e. Making lists for service indicates that back logs are occurring
4. Reactive Deferred – **City of Tampa and New Orleans, Louisiana**
 - a. No street tree inventory
 - b. No systematic pruning cycle
 - c. Wait times for work order completion is 18 months or longer
 - d. Resident/Department requests drive 100% of the workload
 - e. Tree responsibilities are spread over numerous Departments
 - f. Residents make requests to hire their own tree service
5. Deferred - **Arlington, Texas and Bakersfield, California**
 - a. Responsibility for neighborhood street trees is assigned to the adjacent landowner

Forestry SWOT Analysis

Strengths

- The Forestry Division has obtained a computerized work order management system and tree inventory program.
- The current Administration is looking to make significant improvements in reporting and accountability.
- The Forestry Crew is comprised of smart, professional, and safety-conscious staff.
- Forestry works as a team.

Weaknesses

- The number of emergency responses restricts our ability to address the growing backlog of service requests (54% of work completed is an emergency response, FY2021).
- Aging vehicles and equipment affect production (Average Vehicle and Large Equipment age is 13-14 years).
- Permit process may be hindering private tree care.
- Staff size and budget are not meeting the maintenance needs of the street and park tree populations.
- One staff member is not enough for an appropriate planting program.

Threats

- Hurricanes and storms always present a risk.
- Aging/Senescent public tree population.
- Tampa is an international port community and is susceptible to the potential invasion of non-native invasive tree pests that could dramatically affect the urban forest.
- The limited maintenance of trees has resulted in numerous claims against the City and significant damage to City vehicles.
- Tree/branch failure is a regular occurrence (over 2.5 failures per day).

Opportunities

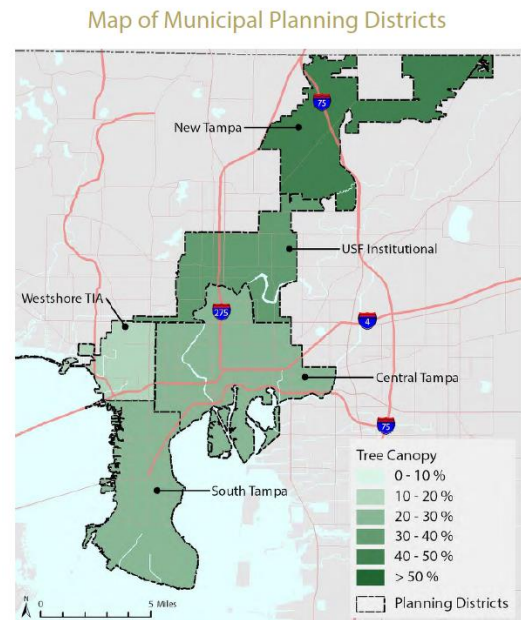
- Create a public tree ordinance authorizing the Forestry Division to determine the planting, maintenance, and removal of trees in the public right-of-way and parks.
- City-wide street tree inventory.
- City staff should pursue roles on the Florida Urban Forestry Council and the Florida Chapter of the International Society of Arboriculture to establish Tampa's role in the leadership in Florida Urban Forestry.

Recommendations

The current Forestry Operating Procedure is:

- Receive a Service Request
- Call the requestor within 2 days to notify them that we will inspect within 2-3 weeks (4-6 weeks in storm season, June through November)
- Upon inspection, priority work is scheduled at 3 months, all other work is scheduled up to 18 months or longer. Notify the requestor of the schedule.
- If we maintain status quo, **we will continue to fall behind**

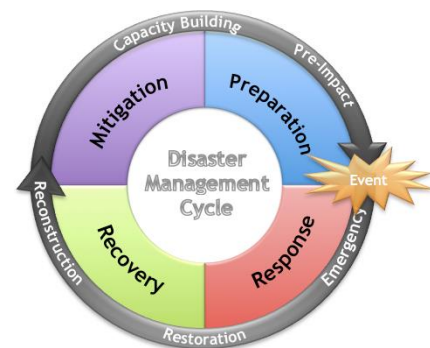
It is recommended that the City incorporate an Area Management Cycle to address the maintenance needs of the street and park trees and reduce the number of incoming requests. **The Urban Forestry Program should be equally active in all 5 Planning Districts.**



Area Management Cycle (Best Management Practices)

The Goals for maintenance would be:

- Healthy street and park trees:
 - Raise the canopy for eventual permanent 16 foot clearance over the road and a balanced canopy over the sidewalk
 - Remove all deadwood greater than four-inch diameter
 - Structural prune weak attachments and co-dominant stems
 - Directional and Crown reduction pruning for clearance (house, street light, street sign, line of sight, traffic control, etc.)
 - Training pruning for young trees
- Identify dead and dying trees and schedule removal, stump removal, and evaluate for replacement
- Management Cycles would address Mitigation in the Disaster Management Cycle. This would lead to greater Preparation, a more efficient Response and a faster Recovery



Please note that utility line pruning is done by TECO or their contractor on a 3-5 year cycle. City staff must maintain a distance of 10 feet from utility lines as they are not line clearance certified.

This work would require:

- A Street tree inventory that identifies trees in the right-of-way, assigns a condition class, identifies high-risk trees, locates available planting sites, and promotes proactive Urban Forestry maintenance.
- **A commitment to grow, equip, and fund a larger in-house workforce capable of meeting the maintenance needs of the Urban Forest**
- An appropriate budget for the Forestry Program
- An outreach program to improve communication with residents
- Work should begin in the USF Institutional and Central Tampa Planning Districts

This would provide:

- Equitable Urban Forestry Management across the 5 Planning Districts
- A reduction in service requests
- A reduction in emergency responses
- A reduction in vehicle/tree conflict
- Reduction in municipal vehicle damage and expense
- More resiliency in the tree population to survive hurricanes and storms
- A monitoring program that would potentially detect new invasive species early
- A reduction in risk and liability as the City begins to manage the tree population proactively, instead of reactively

The 2021 Forestry Division Strategic Plan is directly tied to the City of Tampa Urban Forest Management Plan, Vision Zero, and the Resilient Tampa Roadmap and was developed to address the shortcomings of the current program including, but not limited to:

- Develop a street tree inventory
- Reduce tree failures
- Increase the Urban Tree Canopy through an aggressive planting program
- Reduce tree/vehicle conflicts in the right-of-way
- Proactively manage the Urban Forest Canopy

Tampa has spent well over 40 years focused on tree preservation and not tree maintenance. It will take many years to bring the tree maintenance program up to date and proactive in the management of our Urban Forest Canopy.