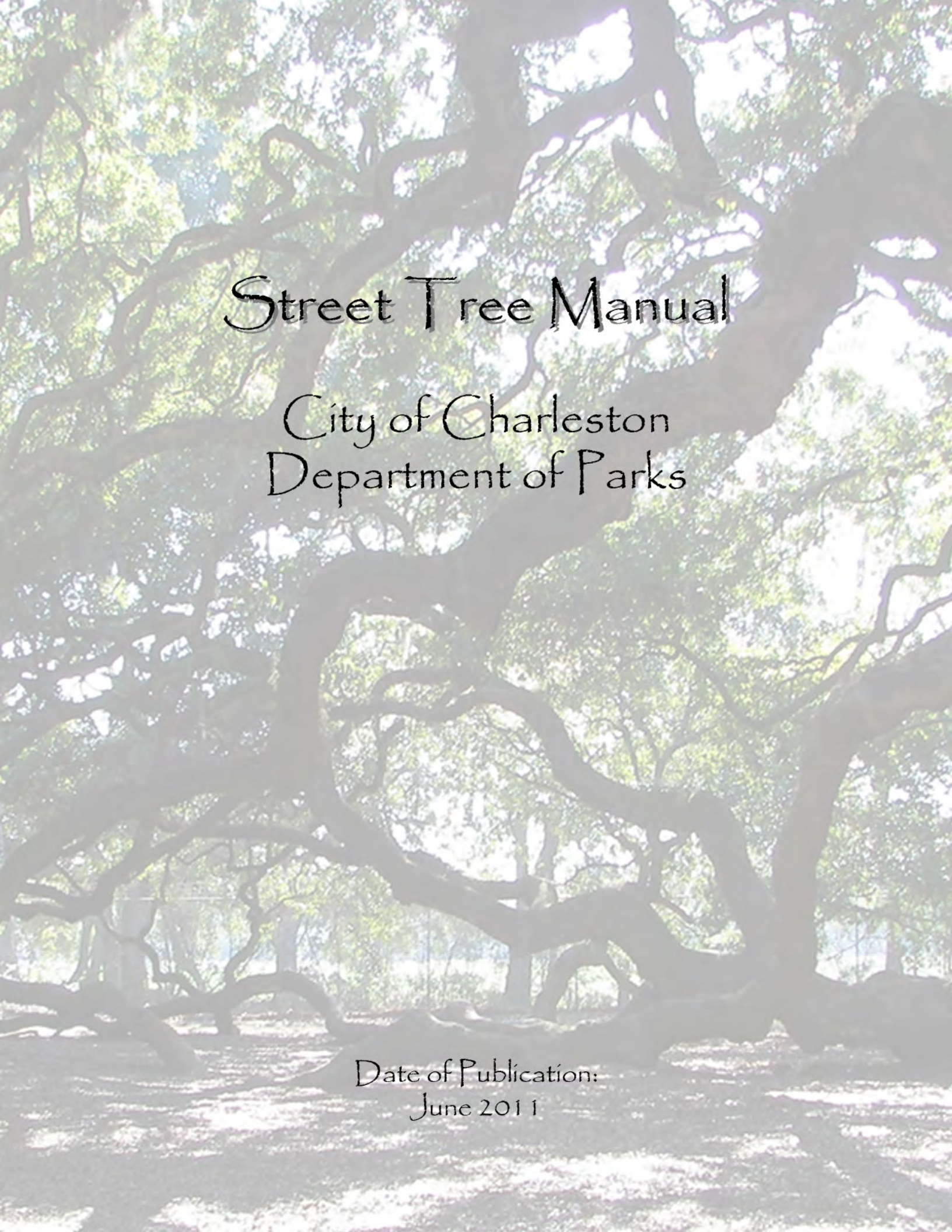

Street Tree Manual

City of Charleston
Department of Parks

Date of Publication:
June 2011

Philosophy

Thoughtfully planned and properly planted street trees contribute mightily to the health and well-being of Charleston's neighborhoods. Mature trees capture and hold in their biomass tons of CO_2 and other pollutants. When trees sequester these pollutants, we do not have to breathe them. Additionally, street trees divert millions of gallons of stormwater runoff which helps to keep our stormwater system from becoming overloaded. An overloaded system can cause flooding and can discharge pollutants into our marshes and streams. One mature tree can have the cooling capacity of five room air conditioners running 24 hours per day. Properly placed street trees reduce energy costs for property owners.

In addition to these environmental contributions, street trees provide a sense of place and character for neighborhoods. They add to the general "curb appeal" and sense of well-being. Healthy street trees increase property values. They have a very definite, calculated dollar value. Trees offer a touch of natural beauty to a neighborhood and can be a home for wildlife, offering us an ongoing connection with nature in the midst of an ever-growing built environment.

This manual supersedes all previous manuals.

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Ordinances

City Ordinances

Sec. 22-51. Permit required to plant street trees.
No shade or ornamental tree or shrub shall be planted in any of the public right-of-ways or easements of the city until such tree or shrub shall have first been approved by the director of the department of parks and a permit therefore be granted by the director of the department of parks.

Sec. 22-52. Street tree permit approvals.
Approved and permitted shade trees, ornamental trees, and shrubs shall be planted at the permittee's expense and approvals shall be based upon the species and cultivar of the tree, the structure of the tree to be planted, the distances apart, and the distance from the edge of any pavement, asphalt, or sidewalk as set forth in the City's street tree manual.

Sec. 22-53. Permit required to remove, cut or prune tree.
No person shall, without the written permission of the director of the department of parks, cut, prune, break, climb, injure or remove any tree or ornamental shrub located in a public right-of-way or easement of the city or on public property. For trees removed unlawfully, without approval, the director of the department of parks is authorized to grant after-the-fact approval, and require mitigation in accordance with the City's street tree manual.

Sec. 22-54. Permit required to remove devices protecting trees.
No person shall, without the written permission of the director of the department of parks, injure, misuse or remove any device placed to protect a tree located in a public right-of-way or easement of the city or on public property.

Sec. 22-55. Permit required to place stones impeding passage of water to trees.
No person shall, without the written permission of the director of the department of parks, place or maintain upon the ground in a public right-of-way or easement of the city or on public property, stone, cement or other substance which shall impede the free passage of water and air to the roots of any tree located in a public right-of-way or easement of the city or on public property.

City Ordinances Continued

Sec. 22-56. Protection of trees during building construction.

In the erection or repair of any building or structure the owner thereof shall place such guards around all the nearby trees in the public right-of-ways and easements of the city and on public property as shall effectually prevent injury, as directed by director of the department of parks

Zoning Ordinance

Sec. 54-831e. Street trees.

Within all new developments or subdivisions, all new thoroughfares, excluding alleys, shall be planted with street trees in accordance with the following requirements.

1. Street tree species selection, size, location and spacing shall require approval of the Department of Parks, pursuant to the City of Charleston Street Tree Manual.
2. Street trees to be planted within street rights-of-way, shall be shown on street tree plans and specifications submitted with road construction documents. The plans and specifications shall satisfy the requirements of the City of Charleston Street Tree Manual.
3. Extensions of existing public rights-of-way with street trees shall require the planting of street trees.

General Information

Mitigation for Approved and Unapproved Tree Removals

The Department of Parks requires an "inch for inch" mitigation for approved canopy street tree removals. Approved removals of palmettos will be "tree for tree". Trees should be planted in the same development if at all possible and should be planted in accordance with this manual.

The Department of Parks requires a "three to one" mitigation for unapproved canopy street tree and palmetto street tree removals. Trees should be planted in the same development if possible and should be planted in accordance with this manual. If all inches cannot be planted within the same development then a contribution to the street tree mitigation fund will suffice.

Street Tree Lists

In an effort to foster creativity, this street tree manual does not provide a list of approved trees. The Department of Parks is willing to consider any species for approval except for those shown in the unapproved street tree list. For trees listed on the conditionally approved list, approvals are granted by the Department of Parks on a case by case basis.

Unapproved List

Common Name	Genus species
Bradford Pear	Pyrus calleryana 'Bradford'
Popcorn Tree	Carya illinoinensis
Pine	Pinus sp.
Red Maple	Acer rubrum
Sweet Gum (fruiting & fruitless)	Liquidambar styraciflua
Water Oak	Quercus nigra

Conditionally Approved List

Common Name	Genus species
American Sycamore	Plantanus occidentalis
Canary Island Date Palm	Phoenix canariensis
Honeylocust	Gleditsia triacanthos
London Plane Tree	Plantanus x acerifolia
Washingtonia Palm	Washingtonia robusta
Weeping Willow	Salix babylonica

Street Tree Population as of 2000

Common Name	Genus Species	Percentage
Live Oak	Quercus virginiana	22.8%
Common Crape myrtle	Lagerstroemia indica	18.4%
Cabbage Palmetto	Sabal palmetto	15.3%
Water Oak	Quercus nigra	5.9%
Laurel Oak	Quercus hemisphaerica	4.8%
All others (not limited to)		32.7%
Sycamore / London Plane		
American and Chinese Elms		
Eastern Red Cedar		
Pindo Palm		
American Hornbeam		
Blacksun Tupelo		
Bald Cypress		
Dogwood		

The street tree population is represented by 86 genra and over 140 species/ cultivars. The table above shows that three species comprise over 55% of the total tree population and over 22% of the tree population is a single species.

In general, no one species should account for more than 10% of the population. Further, no single genus should comprise more than 20% of the population. We encourage developers to select species that perform well as street trees yet are under-represented in the street tree inventory. Live oaks, crape myrtles and sabal palmettos will be allowed, but they cannot represent the majority of new streetscapes.

General Spacing for Street Trees by Canopy Size

Large Tree 40'+ canopy
30' minimum; 60' maximum; 45' preferred

Medium Tree 15' to 40' canopy
15' minimum; 40' maximum; 30' preferred

Small Tree less than 15' canopy
15' minimum; 25' maximum; 20' preferred

Types of Watering Methods and Recommended Watering

Acceptable Watering Methods:

- Gator bags
- Saucer with hand watering
- Irrigation

Plans for in-ground irrigation systems shall be submitted at time of review for approval.

Trees shall be watered from installation through the completion of the warranty period.

Recommended Watering Schedule:

- < 2 inch caliper:
  2-3 gallons per inch of caliper daily for 1 - 2 weeks
  2-3 gallons per inch of caliper every other day for 1 - 2 months
  2-3 gallons per inch of caliper weekly for two (2) months
  Additional watering as needed through first year

- 2-4 inch caliper:
  2-3 gallons per inch of caliper daily for 1 month
  2-3 gallons per inch of caliper every other day for 2 - 3 months
  2-3 gallons per inch of caliper weekly for two (2) months
  Additional watering as needed through first year

- > 4 inch caliper:
  2-3 gallons per inch of caliper daily for six (6) weeks
  2-3 gallons per inch of caliper every other day for five (5) months
  2-3 gallons per inch of caliper weekly until established

- Palmettos
  Watering is based on the average daily temperatures and soil type at the location. Water tree by flooding saucer and allowing water to perk in and then flood again, or put a hose on slow drip and saturate soil completely.
  Temperature:
  0-55 = no watering needed 55-70 = water one (1) time per week
  70-85 = water two (2) times per week 85 - up = water four (4) times per week

Site conditions may warrant modifications to the recommended schedule.

If the landscape contractor has a more intensive watering schedule, please consult with them regarding their warranty.

Types of Watering Methods and Recommended Watering Continued

Tree Establishment: Irrigation Research at the University of Florida

- Trees are irrigated up to 21 times each week in the nursery.
- Live oak trees (2.5" trunk diameter) watered regularly two to three times each week take about 12 months to establish roots in the landscape. Bigger trees take longer.
- For bare minimum survival, a 2.5" diameter live oak planted in the spring needs water twice weekly for about 10 weeks, then no irrigation is needed to provided normal rains begin.
- You cannot make up for lack of frequency by applying large volumes of water infrequently.
- Soil amendments in the backfill soil do not help reduce tree irrigation requirements.
- It is better to apply irrigation frequently in the weeks and months immediately after planting then to apply the same volume over a longer period.
- There is no data demonstrating that native trees or shrubs can get by with less water than non-natives after transplanting to the landscape.
- Survival can be improved and water use reduced by using low volume irrigation technology.

Disclaimer on Irrigation Requirements

Many factors govern irrigation requirements on newly planted trees. Some of the factors are listed below. These factors should be considered and irrigation needs adjusted accordingly.

- Species
- Climate
- Sun/Shade
- Soil Type
- Time of Year
- Plant Size
- Soil Type
- Soil Fertility
- Soil Compaction
- Soil drainage
- Available Soil Volume
- Plant Spacing
- Slope
- Depth of Water Table
- Plant Nutrient Status
- Planting Depth
- Irrigating Placement
- Irrigation Amount
- Irrigation Frequency
- Irrigation Duration & Delivery Schedule
- Planting on Raised Berm vs. Level Ground
- Amendments in Planting Bed
- Pruning Timing and Amount
- Presence of Existing Root Systems
- Root Bound Nursery Stock or Not
- Subsurface Compacted Soil Layers
- Mulch Depth & Type
- Root ball Slicing
- Rainfall Amounts
- Stage of Growth
- Salt air, Wind

Research and Information from the website of Dr. Edward F. Gilman, Professor of Environmental Horticulture

Required Statements, Information and Notes

Please include the following information in landscape plans submitted for review:

- Guarantee statement
  - Trees with a caliper of 2" to 3.5" will be required to have a one (1) year warranty
  - Trees with a caliper of 4" to 6" will be required to have a two (2) year warranty
  - Trees with a caliper larger than 6" will be required to have a three (3) year warranty
  - Palmettos will be required to have a two (2) year warranty
  - Warranty period begins at acceptance of street trees by the City of Charleston's Department of Parks
- Watering Schedule
- List of Proposed Street Trees (Street Tree Planting Schedule)

  This list should be separate from the planting list for private areas.

  The proposed street tree list should include the scientific names, common names, quantities and other specifications such as minimum height, canopy spread, root ball type, caliper, size and mulch information.
- Notes - Language must appear exactly was stated below.

  " Trees planted in the right-of-way must meet ANLA Nursery Stock Standards, and species selection must be approved by the Department of Parks. The City reserves the right to reject any street tree deemed to be unacceptable."

ANLA Standards for Street Trees

Please refer to:
http://www.anla.org/docs/About%20ANLA/Industry%20Resources/ANLAStandard2004.pdf

Sequence for Construction

- Street trees, where practicable, should be installed along with the other streetscape elements.
- Trees that are planted shall be properly protected and said protection shall be maintained while construction occurs on adjacent parcels. Please refer to the tree protection method compliant with the City of Charleston's Zoning Division.
- Warranty Bond shall be issued at time of acceptance of street trees.
- If necessary, projects (or phases of projects) with 25 or more trees may be bonded at 150% of the estimated cost. This cost shall include the price of the trees, installation of the trees, approved watering method, mulching and staking, if necessary. Smaller bonds will be considered based on market conditions.
- If necessary, projects (or phases of projects) may be banked at 100% of the estimated cost. This cost shall include the price of the trees, installation of the trees, approved watering method, mulching and staking, if necessary.
- Bonds shall be issued for 24 months (730 days) initially and may be renewed for up to three (3) additional 12 month periods as necessary.
- Street trees shall be planted during the appropriate planting season. Trees shall not be planted during April through September.

Street Tree Banking

- Street Tree Bank

  Street tree bank is an account established specifically for street tree requirements. Should the developer choose to utilize this instrument; a tree bank analysis shall be submitted for approval. (Please refer to contact information on page 11.) The developer shall pay the Department of Parks 100% of the approved estimated cost as determined in the tree bank analysis, at which time the street tree requirements are considered satisfied. The City will then utilize the deposited funds to pay for the street tree installation and establishment per the approved plans after adjacent building construction is completed. Projects will be planted in full blocks when possible, and all projects will be planted within five (5) years of acceptance of the right-of-way regardless of the status of adjacent construction. The Department of Parks reserves the right to change street tree species dependant on final building product or current information. Changes will be made in consultation with the Developer.

Street Tree Banking Continued

- Street Tree Bank Analysis

A tree bank analysis is 100% of the estimated cost of the trees, installation, watering, mulching and staking, if required. The tree bank analysis shall be submitted to the Department of Parks for review and approval prior to submitting a final plat for recording. (Please refer to contact information on page 11.) Please include the approved street tree layout plan with the bank analysis. This plan should include street names and should be full-size and to scale. Allow one (1) week for approval. Once approved, a copy of the bank analysis will be sent back to the applicant via email. Please keep this copy for your records. A copy of the approved tree bank analysis will be required to be submitted to the City of Charleston's Engineering Division when submitting your final plat for recording. Payment in full must be received by the Department of Parks prior to your final plat being recorded.

Street Tree Bonding

- Street Tree Bond Analysis

A street tree bond analysis is 150% of the estimated cost of the trees, installation, watering, mulching, and staking, if required. The street tree bond analysis shall be submitted to the Department of Parks for review and approval prior to submitting a final plat for recording. (Plesae refer to contact information on page 11). Please include the approved street tree layout plan with the bond analysis. This plan should include street tree names and should be full-size and to scale. Allow one (1) week for approval. Once approved, a copy of the bond analysis will be sent back to the applicant via email. Please keep this copy for your records. A copy of the approved bond analysis will be required to be submitted to the City of Charleston's Engineering Division when submitting your final plat for recording.

- Street Tree Bond Agreement

Two original executed street tree bond agreements shall be submitted to the City of Charleston's Engineering Division as part of the final plat recording package. Once Park's receives the original bond agreements, an approved analysis and an approved bonding instrument, Parks will forward all documents to the City's Legal Department for review and approval. The documents will then be sent to the City's Financial Department for approval and signature. Once approved and signed, Parks will send one original document back to the applicant via USPS for their records. Please allow at least two (2) weeks for this process.

Street Tree Bonding Continued

- Bonding Instrument

  A bonding instrument is considered a letter of credit, payment bond, cashier's check or other financial instrument deemed acceptable to the City of Charleston's Legal and Financial Departments.

- Release of Bond

  Upon final inspection and acceptance, the City of Charleston's Department of Parks will notify Legal and Finance staff that the applicant's obligations have been met. At this time, the bond will be released and the warranty period for the street trees will begin. A warranty bond shall be in affect before the street tree planting bond is released. The Developer is responsible for contacting the Department of Parks to schedule inspections for the release of bonds.

- Warranty Bond

  Upon final inspection and acceptance, the City of Charleston's Department of Parks will require a submission of a warranty bond for the street tree plantings. See Warranty Bond in appendix.

- Release of Warranty Bond

  Upon final warranty inspection and acceptance, the City of Charleston's Department of Parks will notify Legal and Finance staff that the applicant's obligations have been met. At this time, the warranty bond will be released. Trees rejected during this inspection will be replaced by the Developer and a new warranty bond for the replaced trees will be required.

  Notices

  - Notice for Inspection of Installation

    Please give the Department of Parks at least a two (2) week notice of anticipated installation date. Please email the primary and secondary contact listed below to notify the Department of Parks.

  - Notice of Completion of Installation

    A request for inspection shall be made after all trees in the project or phase of project have been installed. Please email the primary and secondary contact listed below to request an inspection. You do not have to be present for the inspection. Most inspections will be completed within two weeks.

Street Tree Bonding Continued

Notices Continued

- Notice of Acceptance or Denial

  The Department of Parks will notify the Developer of acceptance or denial in writing within two (2) working days of final inspection . Phases must be complete. If elements of the work are found to be out of compliance with this street tree manual (species, quality, location, etc.) then the developer will be notified of the deficiencies in writing. Bonds will not be released until all elements of the work are completed. Upon correction of deficiencies an additional inspection will be required. Partial releases shall be considered if original bond consists of 50 or more trees. Additionally, entire blocks must be completed for a partial release. No less than 50% of the original bond will be released.

  Contact Information:

  Clark DeCiantis (Primary)
  823 Meeting Street
  Charleston, SC 29403
  DeCiantisF@charleston-sc.gov

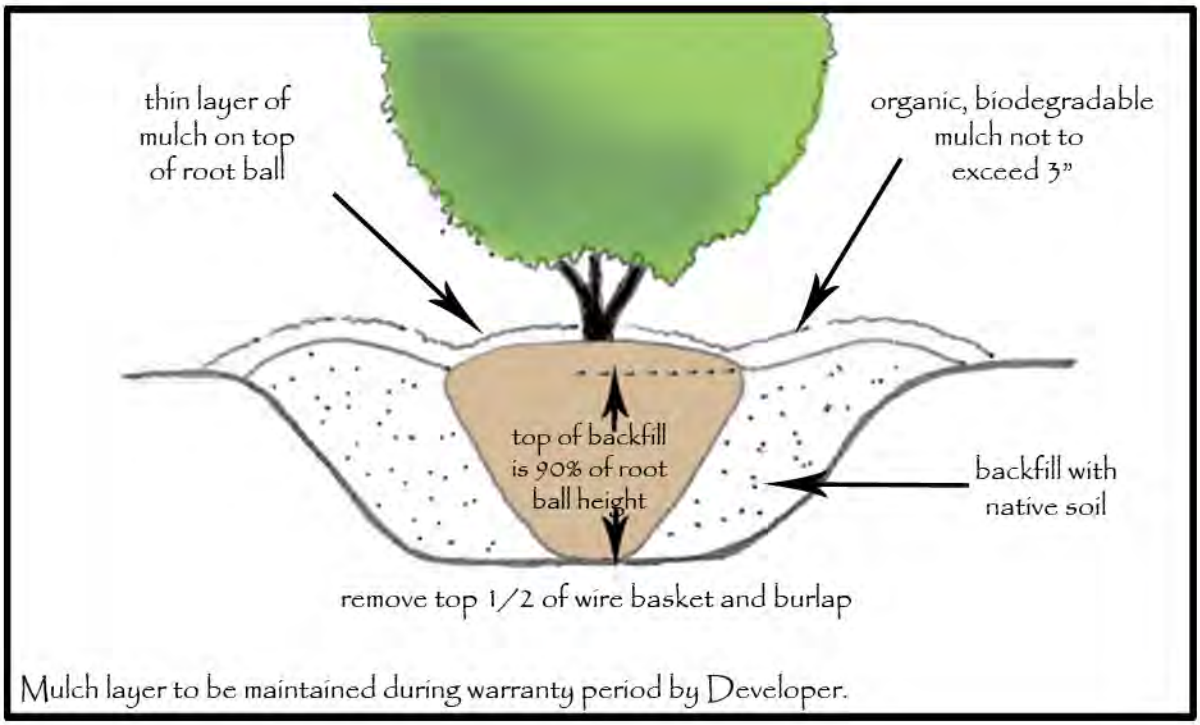
  Danny Burbage (Secondary)
  823 Meeting Street
  Charleston, SC 29403
  BurbageD@charleston-sc.gov
  843.724.7416

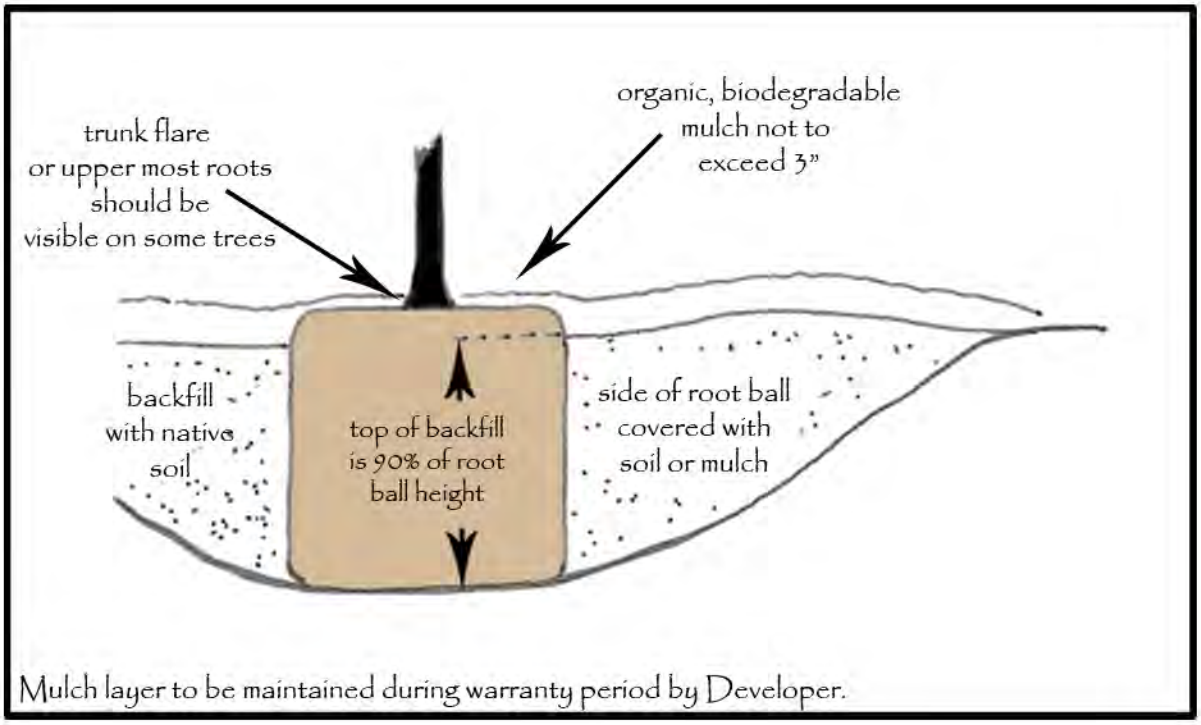
- Notice of Inspection for Warranty Bond Release

  The Department of Parks will notify the Developer of acceptance or denial in writing within two (2) working days of final warranty bond inspection . If elements of the work are found to be out of compliance with this street tree manual (species, quality, location, etc.) then the developer will be notified of the deficiencies in writing. The original warranty bond will be released and a new warranty bond will be required for the replacement trees.

Graphics

Planting Details and Specifications





Planting Details and Specifications Continued

Steps to Proper Street Tree Planting

1. Look up for wires and lights. Contact Palmetto Utility Locator (1-800-290-2783) at least three days prior to planting.

2. Verify that the selected location and species are according to the approved street tree plan. If another streetscape element has been placed in a manner that conflicts with the approved location, notify the Department of Parks before proceeding.

3. Dig a shallow and wide hole (at least 1 ½ times the width of the ball).

4. Find the topmost root and treat root defects (i.e. ungirdle circling roots).

5. Carefully place tree in hole, moving tree by root ball.

6. Position top root 1-2 inches above landscape soil.

7. Straighten tree.

8. Remove synthetic materials. On B&B trees remove at least 1/2 of wire basket and burlap.

9. Add and firm backfill soil to 2/3 height of hole.

10. Water thoroughly, probing to eliminate air pockets.

11. Add remainder of backfill soil to cover 90% of root ball.

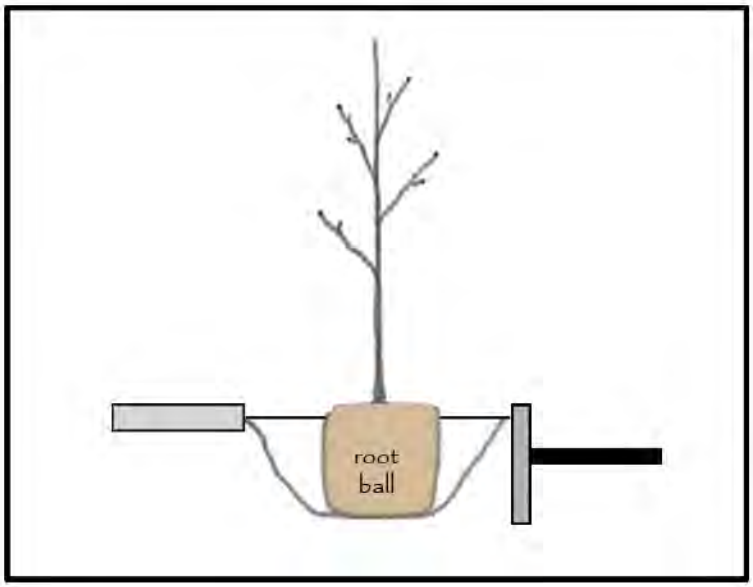
12. Add mulch.

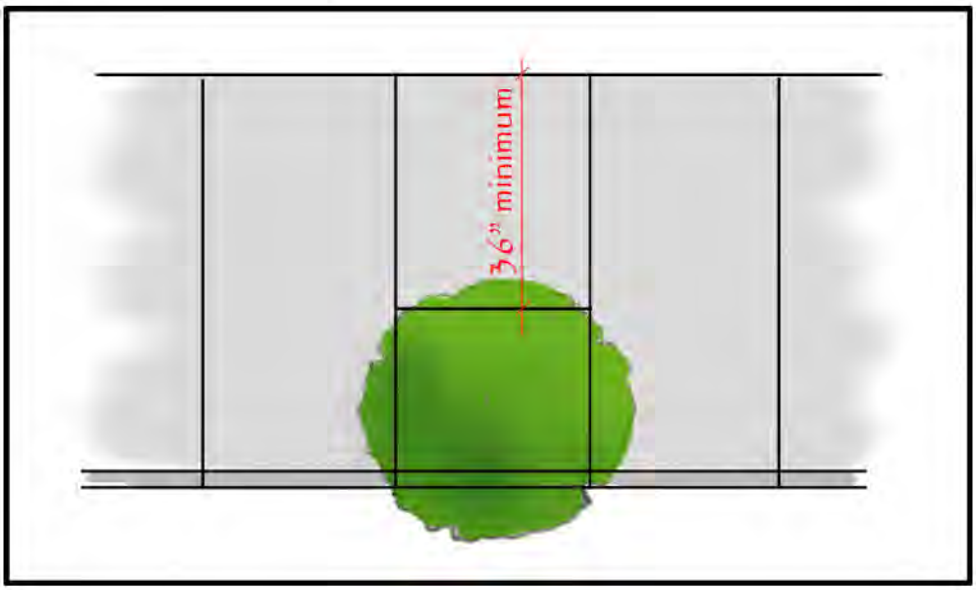
13. Stake and prune, if necessary (broken or rubbing limbs).

14. Begin watering per approved schedule.

Planting Details and Specifications Continued

Tree Well

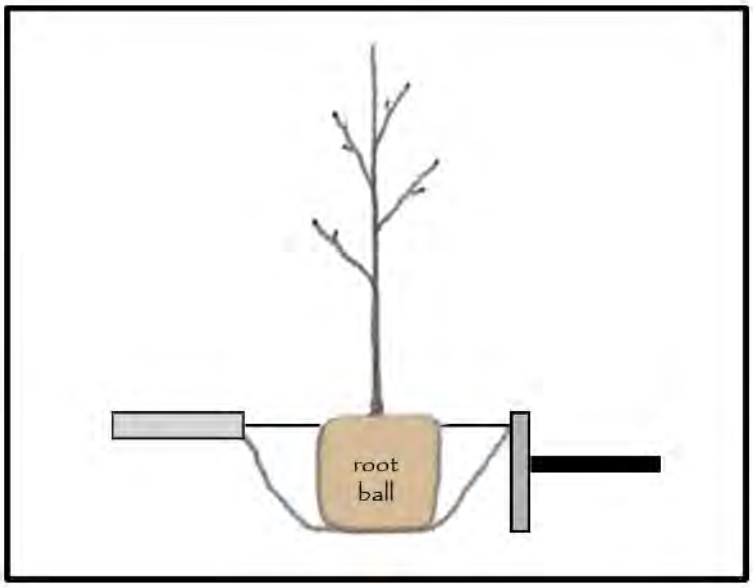


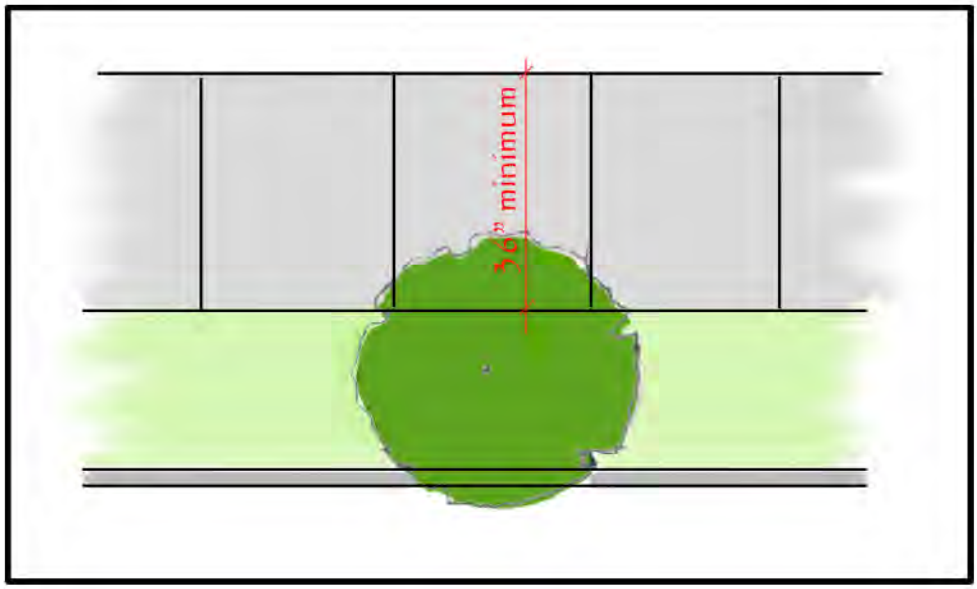


- Minimum tree well size is 2' x 3'; ideal tree well is 4' x 6' or larger.
- Consideration should be given to the sidewalk joint pattern as to what the dimension of the tree well should be.
- Tree should be placed in the center of the tree well.
- Small tree wells may require structural amendments to provide necessary soil volume to sustain selected species.
- Tree well to be entirely mulched.
- No plantings underneath tree (i.e. groundcover) will be allowed during warranty period.

Planting Details and Specifications Continued

Tree Lawn



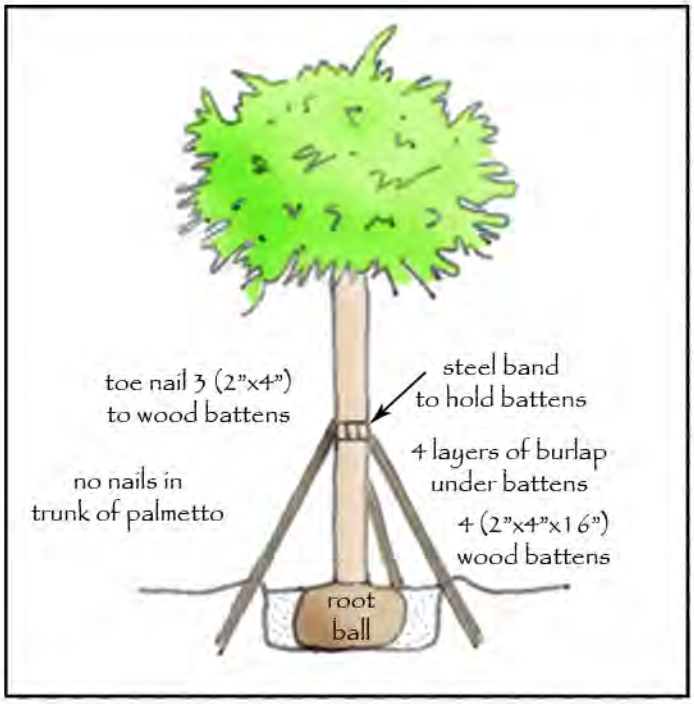


- Tree lawn width should be a minimum of 4 feet wide.
- Tree should be placed in the center of the tree lawn.
- Mulch to dripline of tree.
- No plantings underneath tree (i.e. groundcover) will be allowed during warranty period.

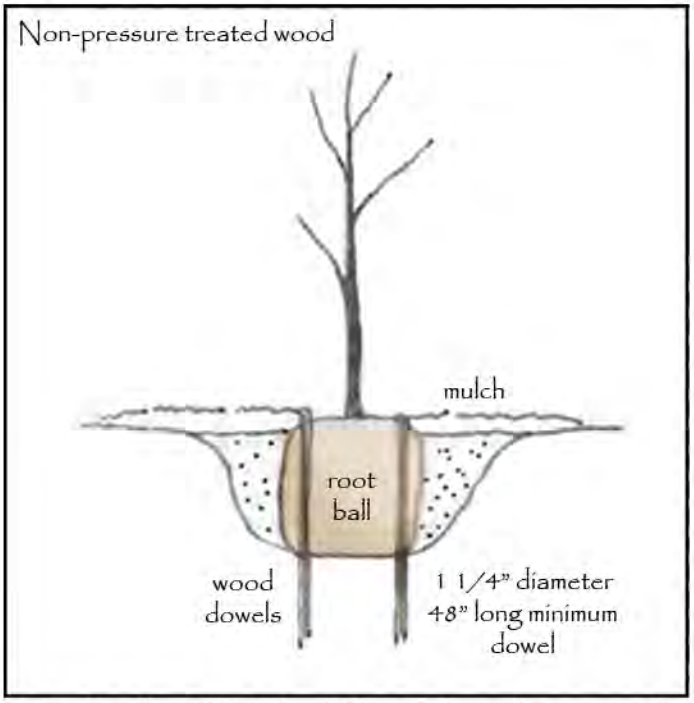
Staking Details and Specifications

In many instances staking may not be necessary. If staking is deemed to be necessary, please use the following methods.

Palmetto



Single- Stem and Multi-Stem

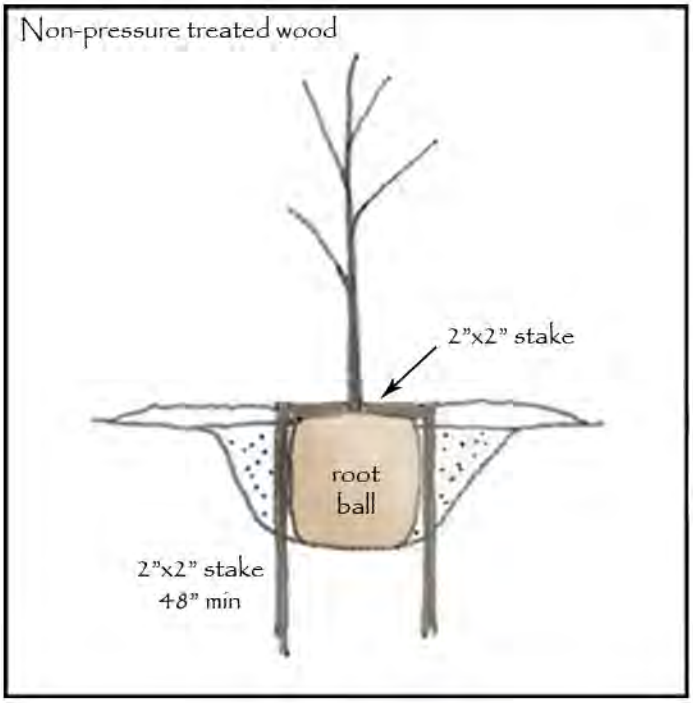


Graphics are from the website of Dr. Edward Gilman, Professor of Environmental Horticulture

Two or three wooden dowels driven through edge of root ball.

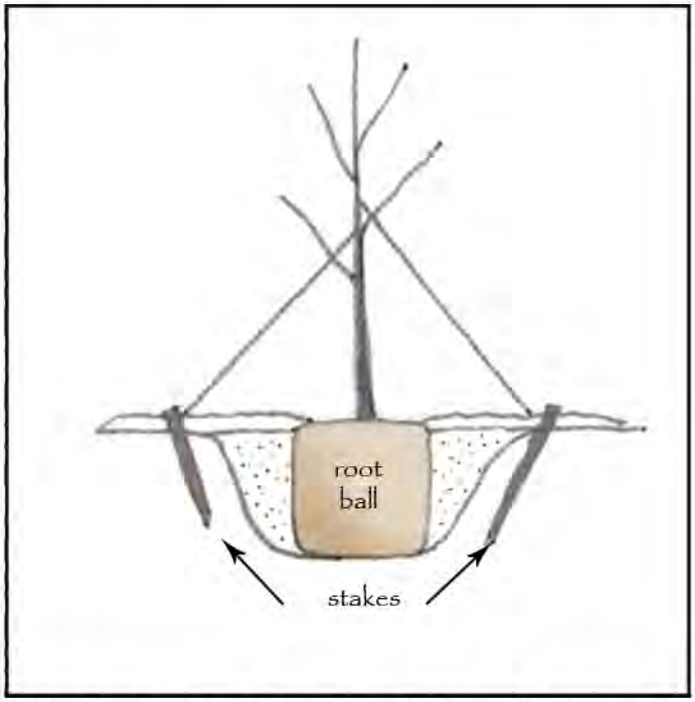
GRAPHICS

Staking Details and Specifications Continued



Graphics are from the website of Dr. Edward Gilman, Professor of Environmental Horticulture

One horizontal 2" x 2" untreated stake screwed to two vertical 2" x 2" untreated stake against the side of the rootball. A second set is use on the other side for larger trees, if needed.

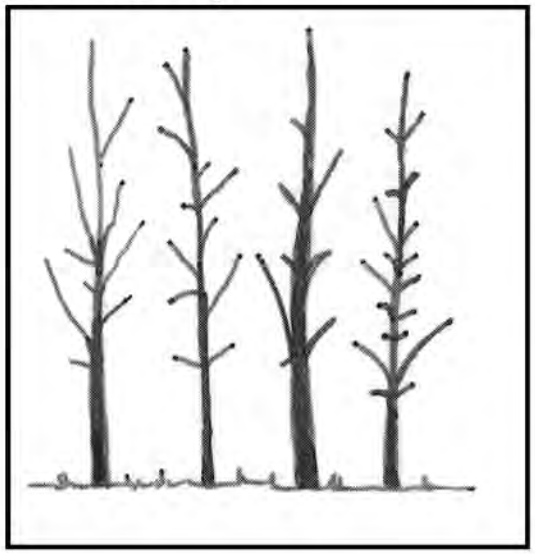


Graphics are from the website of Dr. Edward Gilman, Professor of Environmental Horticulture

Three short stakes (two shown) driven into the soil in a traditional manner attached to the trunk with stretchable material.

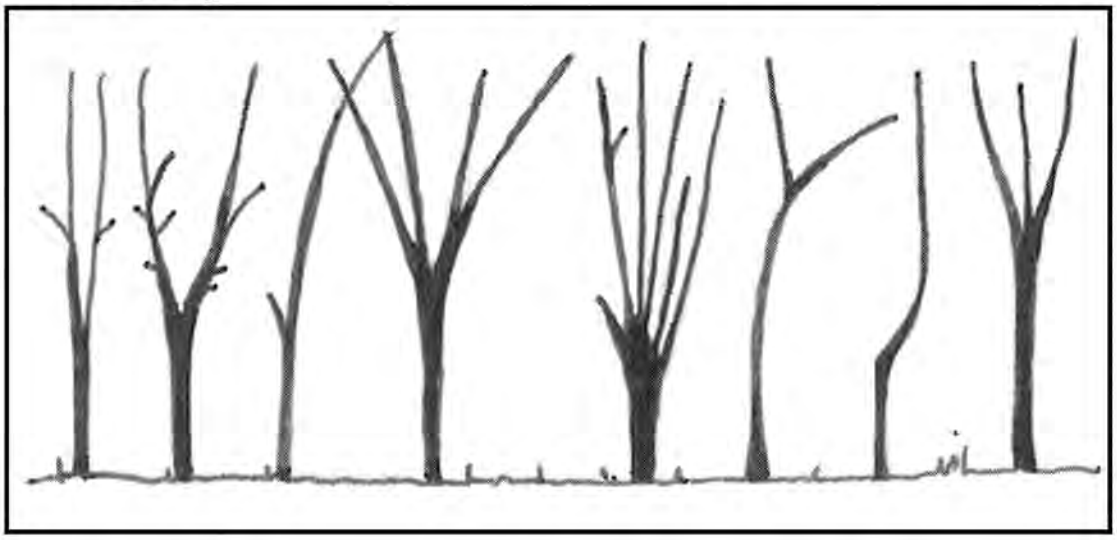
Forms of Trees

Best Quality



Good Quality

Poor Quality



Poor quality trees have multiple leaders that weaken the strength of the trees.

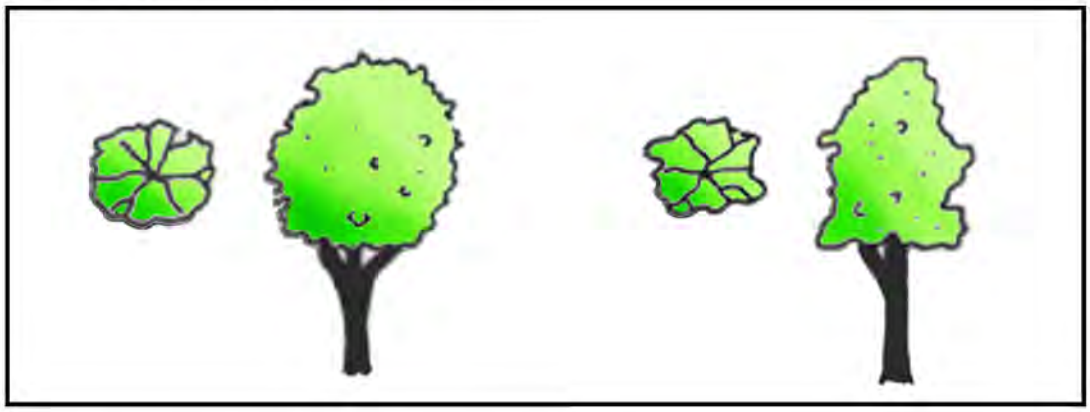
Forms of Trees

Good Quality

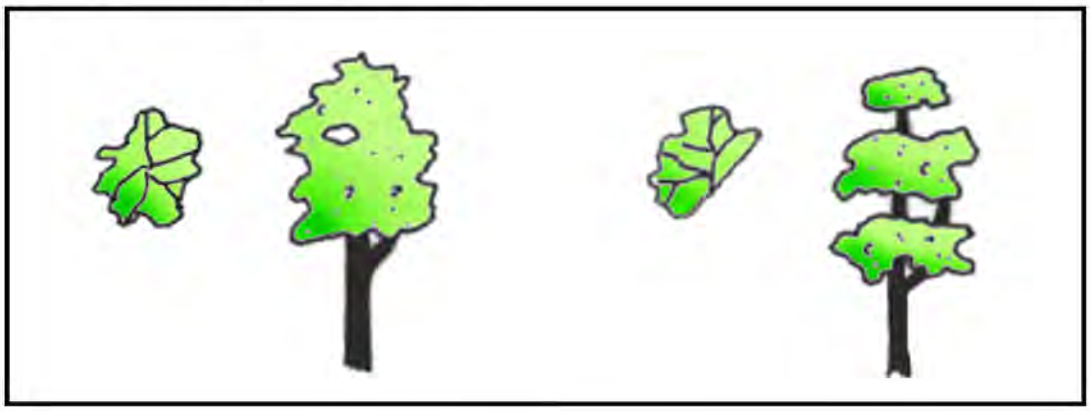
Poor Quality

Trees with one dominant trunk are better quality than trees with multiple upright trunks.

Good Uniformity and Fullness



Poor Uniformity and Fullness



Sample of Street Tree Bank Analysis

Date prepared

Letterhead

Summary of Tree Bank Analysis for:
_____ *(Title of project)* _____

(seal of registered professional)

Probable Construction Cost for:

Common Name of Tree	Height	Spread/ Caliper	Quantity	Cost of tree	Total

Installation of trees and gator bags $ _____

Watering trees per watering specifications included in the manual ($ ___ / tree / week) $ _____

$ _____

Bank amount 100% $ _____

TOTAL REQUIRED BANK AMOUNT $ _____

Bank amount approved by:

_____ Date: _____

Jason Kronsberg, RLA
Deputy Director of Parks Operations
City of Charleston, Department of Parks

Sample of Street Tree Bond Analysis

Date prepared

Letterhead

Summary of Tree Bond Analysis for:

(seal of registered professional)

_____*(Title of project)*_____

Probable Construction Cost for:

Common Name of Tree	Height	Spread/ Caliper	Quantity	Cost of tree	Total

Installation of trees and gator bags $ _____

Watering trees per watering specifications included in the manual ($ ___ / tree / week) $ _____

$ _____

Bond amount 150% $ _____

TOTAL REQUIRED BOND AMOUNT $ _____

Bond amount approved by:

_____ Date: _____

Jason Kronsberg, RLA
Deputy Director of Parks Operations
City of Charleston, Department of Parks

Sample Bond Agreement

STATE OF SOUTH CAROLINA)
) STREET TREE BONDING AGREEMENT
COUNTY OF _____)

THIS STREET TREE BONDING AGREEMENT (this ***"Agreement"***) made and entered into this ____ day of _____, 20__, by and between _____, having a mailing address of _____, (hereinafter the ***"Owner"***), and **THE CITY OF CHARLESTON, SOUTH CAROLINA** (hereinafter the ***"City"***), in the state aforesaid.

WHEREAS, the Owner has submitted to the City a subdivision plat entitled "_____ _____ _____," dated _____, 20__, prepared by _____, and recorded in the RMC Office for Charleston County in Plat Book ____, at Page ____ (hereinafter the ***"Plat"***) of the Owner's project identified as_____ _____ _____ (hereinafter the ***"Project"***); and

WHEREAS, as a condition of approval of the aforesaid Plat, the Owner has agreed to post a bond or other adequate security in a form acceptable to the City for the completion of certain street tree improvements required for the Project (hereinafter the ***"Bonded Improvements"***); and

NOW, THEREFORE, in consideration of the foregoing and of mutual promises contained in this Agreement, the parties in this Agreement agree as follows:

1. As a condition of approval of the Plat by the City, the Owner hereby agrees to obtain a Street Tree Bond in a form acceptable to the City for the benefit of the City (hereinafter the ***"Street Tree Bond"***). Said Street Tree Bond shall contain the following terms:

   a. The amount of the Street Tree Bond shall be _____Dollars and __/100 ($_____), which represents one and one-half (1½) times the estimate of the cost to construct the Bonded Improvements as shown on the Project construction drawings approved by the city engineer and as verified by an independent cost estimate for the construction of the Bonded Improvements prepared by_____, attached hereto and incorporated by reference herein.

   b. The Owner shall authorize the City to draw against the Street Tree Bond upon presentation of a statement signed by an authorized officer of the City that the Owner has failed to construct the Bonded Improvements as approved on the construction drawings for the Project dated _____, 20__, last revisions dated _____, 20__, within 24 month(s) of the date of this Agreement.

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Sample Bond Agreement Continued

2. Upon completion of the Bonded Improvements as shown on the Approved Construction Drawings for the Project, the Owner shall request that the same be inspected by the City. If the inspection by the City verifies that the Bonded Improvements have been completed in accordance with the approved Project construction drawings and the applicable regulations in effect as of the date of the approved construction drawings for the Project, the City shall send notice to the Owner that the conditions of the Street Tree Bond have been satisfied and the Street Tree Bond is to be released to the Owner. In the event the Bonded Improvements have not been properly completed in accordance with the approved Project construction drawings and the applicable regulations in effect as of the date of the approved construction drawings for the Project, the City shall immediately notify the Owner, in writing, specifying what items have not been completed pursuant to the approved Project construction drawings and/or the applicable regulations in effect as of the date of the approved construction drawings for the Project.

3. In the event that it is necessary for the City to complete the Bonded Improvements, the Owner hereby agrees to give the City access to the approved constructions drawings for the Project and to further authorize the City to draw against the Street Tree Bond in accordance with Section 1(b) herein. In such event, the Owner shall cause the Street Tree Bond to be extended by the Surety thereof, if necessary, in order to provide the City with sufficient time in which to construct the Bonded Improvements and draw against the Street Tree Bond in accordance with Section 1(b) herein.

4. Notwithstanding the foregoing, the City reserves the right to issue a stop-work order for the Project and/or withhold the issuance of any certificate of occupancy in the event the Owner has failed to complete the Bonded Improvements in accordance with the terms of this Agreement or extend this Street Tree Bond in accordance with Section 3 herein.

IN WITNESS WHEREOF, the parties have set the Hands and Seals the day and year above written.

WITNESSES:	OWNER
_____	_____
Witness #1	Name:
_____	Date:_____
Witness #2	
WITNESSES:	CITY OF CHARLESTON
_____	_____
Witness #1	By: Joseph P. Riley, Jr. Its: Mayor
_____	Date:_____
Witness #2	

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Sample Warranty Bond Agreement

STATE OF SOUTH CAROLINA	)	**WARRANTY**
	)	**AGREEMENT FOR STREET**
COUNTY OF _____	)	**TREES WITH BOND**

This Warranty Agreement is made and entered into this _____ day of _____20__, by and between the City of Charleston, a municipal corporation organized under the laws of the State of South Carolina (hereinafter referred to as "the City"), and _____ (hereinafter referred to as "Developer") with its principal place of business being _____ _____.

WHEREAS, Developer has undertaken to make certain street tree improvements by planting street trees (hereinafter referred to as the "Improvements") in and for _____ Development, Improvements more particularly shown on the street tree and lighting plan for _____ _____ prepared by _____ dated _____day of _____, 20_____ (hereinafter referred to as "Street Tree Plan"); and

WHEREAS, Developer wishes to have the above said Improvements dedicated to the public and accepted by the City for maintenance. These Improvements have been built in accordance with the City's Street Tree Manual, as amended from time to time, and a condition of the City accepting the Improvements for maintenance is that the Developer agrees to assume warranty responsibility for these Improvements for a period of _____ years from the date of acceptance by City Council; and

WHEREAS, the City has inspected the Improvements, has approved the Street Tree Plan, and has accepted the public Improvements as shown on the approved Street Tree Plan.

NOW THEREFORE, for and in consideration of having the Improvements accepted by the City, and for other good and sufficient consideration, the receipt of which is hereby acknowledged by the parties hereto, Developer enters into this Agreement with the City, guaranteeing that Developer shall comply with the following requirements regarding the Improvements as follows:

1. Developer warrants that it shall, for a period of _____ years from the date of the acceptance of the above-referenced Improvements by City Council (hereinafter referred to as the "Warranty Period"):

   A. Take every reasonable precaution to protect the Improvements from damage by the elements or from any cause whatsoever at no cost to the City, and;

   B. Remove and replace all street trees determined by the City to be diseased, dead, dying or otherwise not in conformance with the City's Street Tree Manual which are

Sample Warranty Bond Agreement Continued

or should be discovered during the Warranty Period even if the City performs repairs, maintenance, removal, and/or replacement due to the defect or defects before the expiration of the _____ year Warranty Period, in which case the Developer shall reimburse the City for its costs incurred therefore and;

C. Provide and maintain suitable barricades for the Improvements wherever necessary, and;

D. Save and hold harmless the City, its officers, agents and employees from any and all claims for damage to persons or property or death, including legal fees and costs associated therewith, sustained as a result of any defect or defects in the Improvements or lack of maintenance thereof or any negligent act or omission by the Developer, its employees, agents, contractors and subcontractors arising out of this Warranty Agreement, and;

E. Save and hold harmless the City, its officers, agents and employees from any and all claims for damage to persons or property or death, including legal fees and costs associated therewith, occurring during any Developer repairs, maintenance, removal, and/or replacement of the Improvements, and;

F. Developer shall not be responsible for damages to the Improvements caused by utilities or others.

2. If in the sole judgment of the City or its designee, repairs, maintenance, removal, and/or replacement to the above-referenced Improvements become necessary at any time during the Warranty Period or after the Warranty Period if the defect or defects are discovered within the expiration of the _____ year Warranty Period, said repairs, maintenance, removal, and/or replacement shall be made by the Developer at the Developer's expense upon written notice from the City or its designee. Developer shall take out and remove all inferior or defective Improvements and replace the same with good and acceptable trees approved by the City as necessary to bring the Improvements into compliance with the certified Street Tree Plans and the Street Tree Manual following final inspection and preceding the commencement of the _____ year Warranty Period. Failure to remedy any defect in the Improvements as requested by the City or its designee shall extend the Warranty Period until such repairs are completed and accepted by the City. If the City elects to make such repairs, the Developer shall reimburse the City for all expenses associated with such repairs no later than thirty (30) days from demand for reimbursement from the City. Repaired and/or removed and replaced Improvements shall be warranted for a period of _____ years from the date of City's acceptance of the repair and/or removal and replacement of the Improvement(s).

3. If during the _____ year Warranty Period, the City or its designee determines that any of the Improvements, need emergency repairs, maintenance, removal, and/or replacement in order to comply with federal, state or local regulations, or if the City or its designee determines that any Improvements require emergency repairs, maintenance, removal, and/or replacement in order to protect the public health, safety or welfare, then the City or its designee may demand in writing of Developer that such repairs,

Sample Warranty Bond Agreement Continued

maintenance, removal, and/or replacement or maintenance be completed within fifteen (15) calendar days from receipt of such demand notice from the City. Should the Developer fail to complete such repairs, maintenance, removal, and/or replacement of such Improvements within fifteen (15) calendar days of receipt of such demand notice from the City, then the City may perform such emergency repairs, maintenance, removal, and/or replacement to the Improvements and Developer shall be responsible for the costs of any such repairs, maintenance, removal, and/or replacement to the Improvements performed by the City and shall reimburse the City for all expenses associated with such repairs, maintenance, removal, and/or replacement no later than thirty (30) days from receipt of a demand for reimbursement from the City.

4. As a condition of this Agreement, the Developer shall provide a bond, attached hereto and incorporated herein as Exhibit A, in a form acceptable to the City for the benefit of the City (hereinafter the "**Warranty Bond**"). The Warranty Bond shall contain the following terms:

A. The amount of the Warranty Bond shall be _____Dollars and __/100 ($_____), which represents ten percent (10%) of the cost of the constructed Improvements as shown on the Street Tree Plan approved by the City and as verified by an independent cost estimate for the Bonded Improvements prepared by_____, attached hereto and incorporated by reference herein as Exhibit B. The Warranty Bond shall be provided by a reputable Federal Treasury Department approved bonding company with at least a rating of A minus.

B. The Developer shall authorize the City to draw against the Warranty Bond upon presentation of a statement signed by an authorized officer of the City that the Developer has failed to maintain or repair the Improvements as required under this Agreement.

C. In the event the City performs maintenance or repairs to the Improvements, the Developer hereby agrees to give the City access to the approved Street Tree Plans for the Project and to draw against the Warranty Bond to pay for the necessary repair, maintenance, removal, and/or replacement to the Improvements. If necessary, the Developer shall cause the Warranty Bond to be extended by the Surety of the Warranty Bond, in order to provide the Surety or the City with sufficient time in which to complete the repairs, maintenance, removal, and/or replacement to the Improvements and draw against the Warranty Bond to pay for such repairs, maintenance, removal, and/or replacement in accordance with this Agreement.

5. During the Warranty Period should the cost of the repairs, maintenance, removal, and/or replacement to the Improvements exceed the Warranty Bond, the City may proceed with the repair, maintenance, removal, and/or replacement of the Improvements and subsequently demand such costs in excess of the Warranty Bond be paid by the Developer. Should Developer not pay such costs within thirty (30) calendar days of the City's written demand therefor, the City shall be entitled to recover such costs from the Developer, including attorney's fees and costs, in a court of competent jurisdiction in

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Sample Warranty Bond Agreement Continued

Charleston County, South Carolina.

6. The parties hereto shall execute the original agreement with all attached original exhibits.

7. Developer agrees that during the Warranty Period, Developer shall advise the City in writing of any change in its address, contact information or corporate status.

8. Developer assures that it is financially stable, solvent and is fiscally capable of completing any repairs, maintenance, removal, replacement and/or other work to the Improvements that may become necessary pursuant to the terms of this Warranty Agreement.

IN WITNESS WHEREOF, the City of Charleston, South Carolina, and Developer have hereunto set their respective hands and seals the day and year hereinafter set forth.

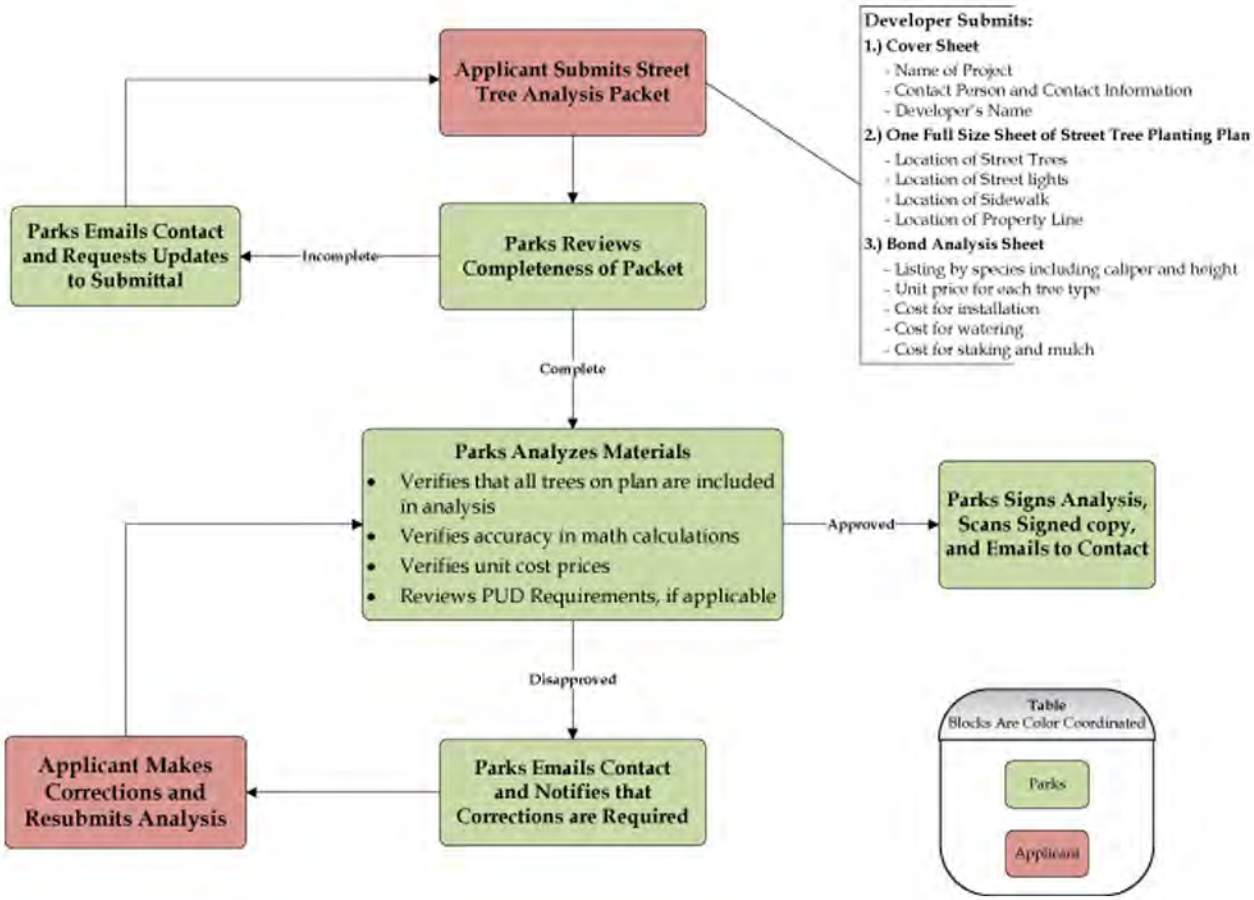
I, _____, hereby certify that all Improvements being dedicated to the City has been installed in accordance with the Street Tree Manual as approved by the City of Charleston.

WITNESSES:	DEVELOPER / OWNER
_____	_____
Witness #1	Name:
_____	Date: _____
Witness #2	

WITNESSES:	CITY OF CHARLESTON
_____	_____
Witness #1	Name: _____
_____	Date: _____
Witness #2	

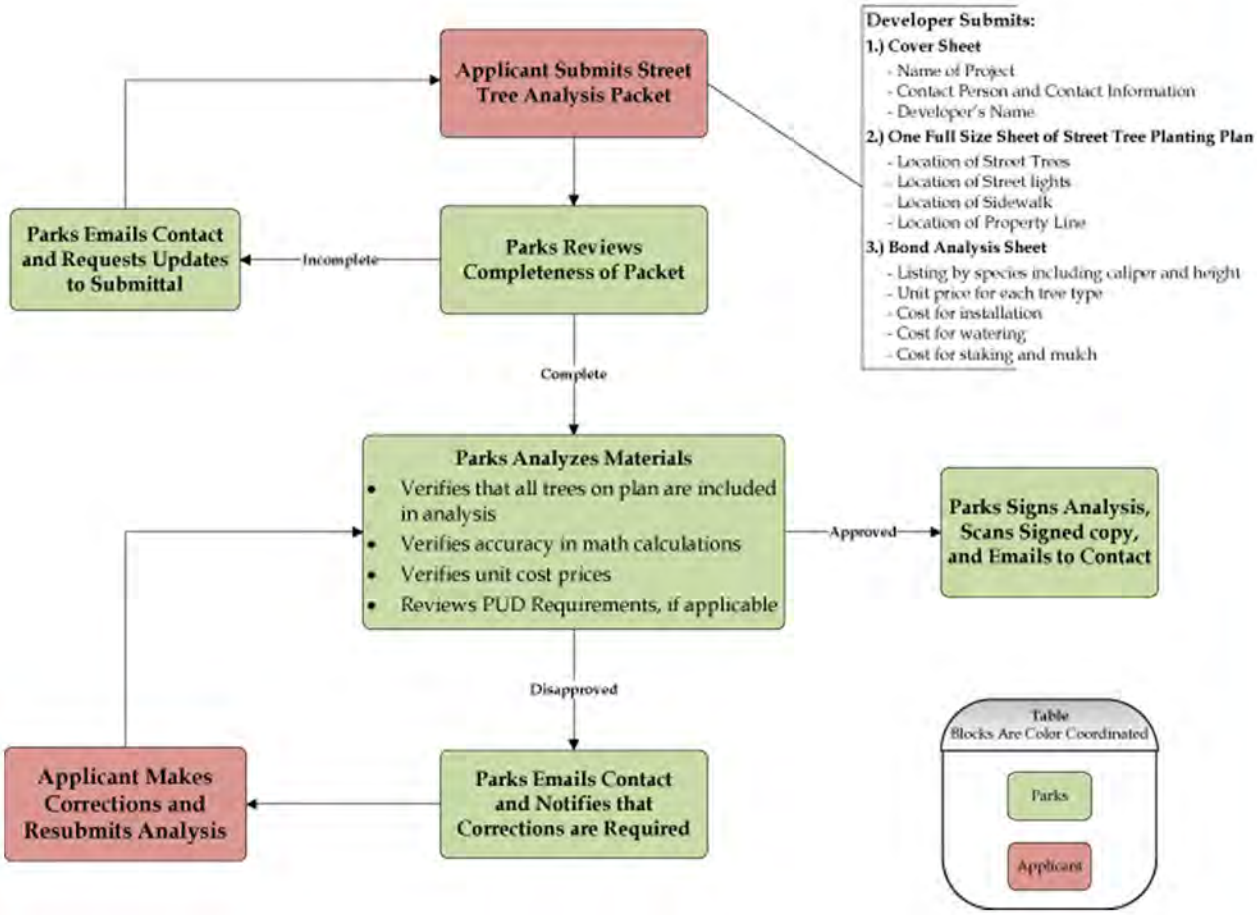
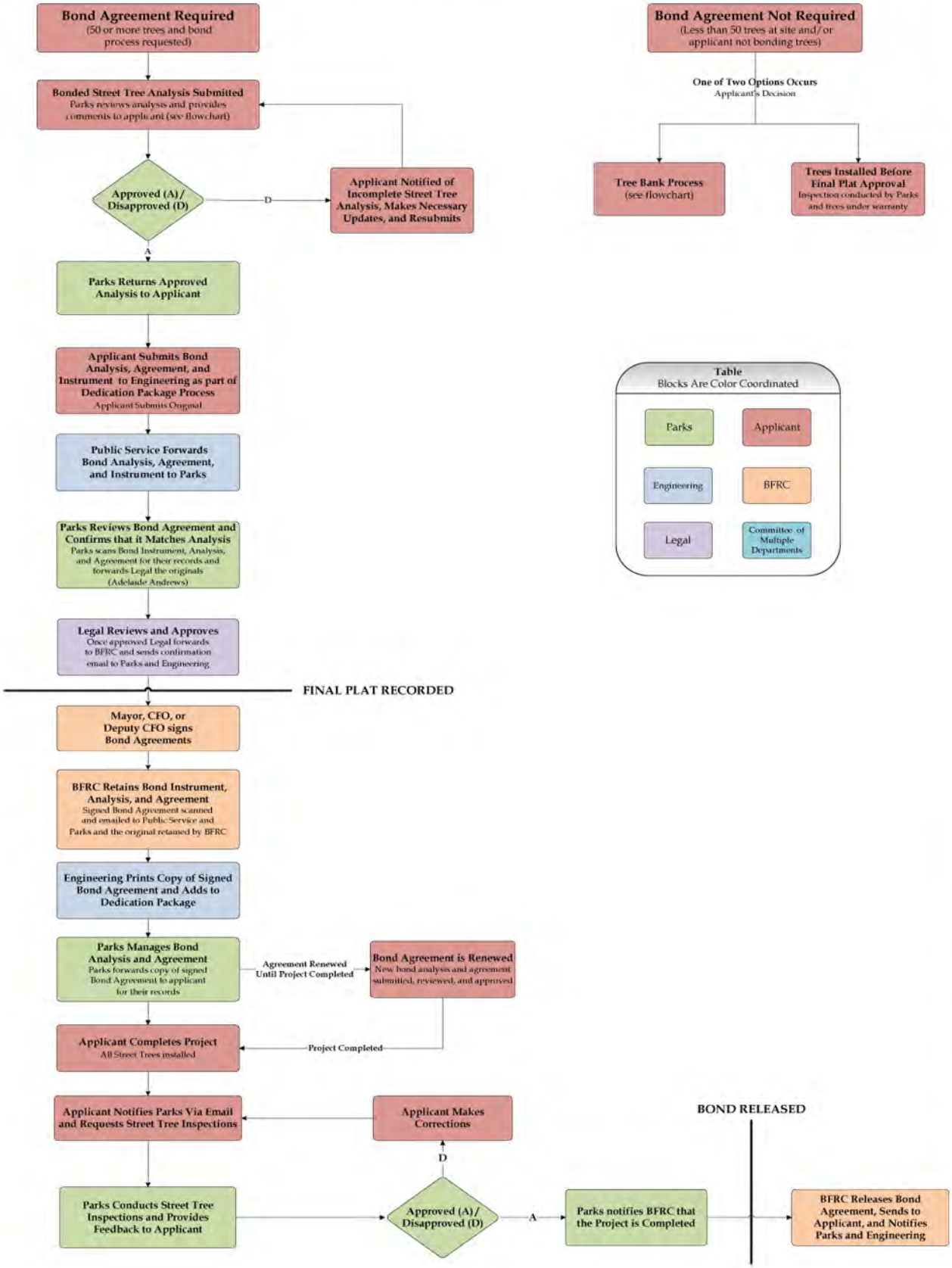
Appendices

Street Tree Bank Analysis Process



Appendices

Street Tree Bond Analysis Process



Street Tree Bonding Process