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I. URBAN FORESTRY RESOURCES
1.0 INTRODUCTION

The Coastal Conservancy awarded $884,000 to Contra Costa County to implement the [North Richmond Watershed Connections Project](#) (Project # 18-014-01) as part of the Prop 1 Urban Greening Grant Program. The Pilot Project consists of installation of a suite of green infrastructure including street trees, bioswales, sidewalks, bike lanes, wayfinding and informational signage to create a 1.75-mile urban trail, designated as the North Richmond Watershed Connections Route. The project will improve water quality, increase the urban canopy, provide environmental stewardship opportunities, and improve community health by creating a cleaner, more walkable, bikeable neighborhood.

The [Clean and Green Adopt-a-Tree Project and the Walkable Watershed](#) component is being managed by The Watershed Project ([Greening Urban Watersheds - The Watershed Project](#)). TWP will create a “Watershed Connections” route in the North Richmond neighborhood and will involve local homeowners in planting around 40 street trees there, largely to be planted in front yards to shade the sidewalk to lower urban temperatures and greater walkability. Specifically, “TWP will partner with neighborhood homeowners to plant additional street trees through its Adopt-a-Tree program, increasing the urban canopy in the Project’s footprint. TWP will select sites and plant street trees utilizing best management practices, construction details and specifications provided by the [City of Richmond Urban Greening Master Plan](#). TWP will provide supplies and oversee planting activities, include the trees in the organization’s online inventory, and monitor the trees during the plant establishment period.” (excerpt from the [Coastal Conservancy Staff Recommendation](#) dated August 22, 2019)

The [Adopt-A-Tree Pilot Project](#) primary goals are:

- **Expand North Richmond’s urban tree canopy**, providing improved air & water quality, a reduction in urban heat islands and GHG emission reductions by planting 40 trees in Unincorporated areas of North Richmond;

- **Engage the North Richmond community** in urban greening efforts, place-making and volunteerism with Adopt-a-Tree programs through tree planting days and outreach/education opportunities;

- **Develop a model for the Adopt-A-Tree Pilot Project** for North Richmond that may be replicated in similar neighborhoods in Unincorporated Contra Costa County with poor tree equity.

As with the CALFIRE / CalReLeaf Urban Tree Canopy project (2019), The Watershed Project will work directly with the North Richmond community, providing employment, training, and volunteer opportunities to engage neighbors in every step of this urban forestry project. By planting suitable, low maintenance tree species in front yards where residents are able to easily observe, water and maintain the trees, TWP aims to encourage stewardship, ownership, and investment in multi-benefit neighborhood improvements. Working in partnership with residents, TWP provides experience in tree planting and maintenance, and community outreach and education, building relationships in the North Richmond community.

By establishing trees that will shade the community for decades to come, TWP developed this urban greening project toolkit to demonstrate replicable implementation methods to help the County frame a future Urban Forestry Program for the unincorporated areas where they have jurisdiction.
PROJECT IMPLEMENTATION

The purpose of the North Richmond Neighborhood Adopt-A-Tree Project Implementation Toolkit is to serve as a step-by-step guide to expanding the urban forest in partnership with residents and County Staff. The lists and resources provided in this toolkit are intended to be utilized and updated or modified in the future to incorporate best practices and ensure a long-lived, sustainable urban forest ecosystem that improves watershed function and neighborhood livability.

CORE ELEMENTS

The North Richmond Watershed Connections (NRWC) project helps link residents with green spaces and community resources for greater health and wellness. The Plan includes four main components:

URBAN GREENING

The Adopt-A-Tree Program aims to protect and expand the urban forest for multiple benefits using the 3-30-300 rule as a guide:

• 3 trees in sight of each residence
• 30% tree canopy cover
• Green spaces within 300 meters or a ten-minute walk (about a 1/2 mile)

The map area shaded in green is the NRWC Adopt-A-Tree Project area. 2023 Tree Planting may prioritize Chesley Avenue, Giaramita Street, Market Avenue and Fred Jackson Way to reinforce the Wayfinding Elements and help cool and beautify the Urban Nature Loop.

WATERSHED AWARENESS

Signage indicates the watershed residents are in and wayfinding to community destinations Interpretive features highlight cultural stories, natural history, and a vision for the future in North Richmond.

PEDESTRIAN CONNECTIONS

The Project includes a loop trail and wayfinding on the sidewalk for pedestrians. Interpretive features highlight cultural stories, natural history, and a vision for the future in North Richmond.

• Safe Routes to School
• Urban Nature Loop (trail)

BICYCLE CONNECTIONS

This map shows local bicycle routes from the County’s Planning Documents:

• Existing Bike Routes included in this guide
• Planned Bike Routes by others
STEP-BY-STEP ADOPT-A-TREE PROJECT IMPLEMENTATION CHECKLIST

The following protocols were developed for planting trees in the unincorporated neighborhood of North Richmond for the North Richmond Watershed Connections (NRWC) Project.

1. **Conduct a Tree Inventory in the project area.** Establish a baseline of existing conditions to geolocate existing trees and opportunity sites for tree planting. Refer to *Appendix A: 2023 Tree Inventory Map* as well as *How to conduct a Street Tree Inventory* by the Arbor Day Foundation ([https://www.arborday.org/trees/bulletins/coordinators/resources/pdfs/023.pdf](https://www.arborday.org/trees/bulletins/coordinators/resources/pdfs/023.pdf)).

2. **Identify tree planting opportunity site(s).** Conduct a walk audit to assess block- and site-level conditions. Visit each site, take photos, note existing conditions and utilities. Make preliminary determinations about the suitability, access, and potential conflicts or limitations.

3. **Outreach and engagement.** Visit occupied homes with verifiable tree opportunity sites in front yards and adjacent to the sidewalk. Share information about the benefits of trees and invite residents and neighbors to join the Adopt-A-Tree project. Obtain contact information from interested parties and follow up with a phone call or email to coordinate next steps. Refer to *Appendix B: Outreach Materials and Information*.

4. Review and sign **Adopt-A-Tree Application & Agreement** with homeowner/landowner including a promise to water the tree and monitor tree health. Refer to *Appendix C: Adopt-a-Tree Application*.

5. Determine the **Right Tree, Right Place** for each opportunity site. Consult with an arborist contracted by The Watershed Project to determine site suitability and best fit for tree species according to each microclimate, soil, planting area, vertical clearance, and resident’s preferences for evergreen or deciduous tree(s). Refer to *Appendix D: Tree Selection Resources, North Richmond Right Tree, Right Place*.

6. **For trees planted in the public right of way, refer to the Approved Tree List** developed in partnership with the County. Refer to *Appendix D: Tree Selection Resources, Section 1: Trees Approved for the Right of Way*.

7. **Review and approve applications.** Prepare a list of tree planting locations, tree address, and photo along with proposed species and distance of center of tree trunk from road/sidewalk for each proposed tree. Confirm if the tree is on private or public property. If necessary, refer to the Contra Costa County CCMAP Website ([https://ccmap.cccounty.us/](https://ccmap.cccounty.us/)) for Property Maps and Information.

8. **Develop a consolidated Planting Plan** for the NRWC Adopt-A-Tree Project. If feasible, cluster tree planting geographically in batches of about 10 trees or by block. Utilize i-Tree Planting to quantify the environmental benefits and value of the proposed tree planting project.

9. **Obtain an encroachment permit for new trees to be planted in the public right of way** (between the sidewalk and the street). Visit the County ePermits Center ([https://epermits.cccounty.us/](https://epermits.cccounty.us/)) to set up an account and fill out the encroachment permit form online. Or, obtain a pdf form from the Permit Portal site ([https://www.contraosta.ca.gov/DocumentCenter/View/31297/Encroachment-Permit-PDF](https://www.contraosta.ca.gov/DocumentCenter/View/31297/Encroachment-Permit-PDF)). Refer to *Encroachment Permit Information* (in Appendix C). Coordinate encroachment permits with County Staff: john.steere@pw.cccounty.us and jocelyn.larocque@pw.cccounty.us. The granting agency may also require the *Permission for Planting and Maintenance of Trees* (in Appendix C) to demonstrate that the County has agreed to allow access to plant trees in the right of way.
10. **Procure tree species and materials for planting and staking.** Order high quality tree stock as early as possible. Order 15 gallon container size as required by the granting agency. Visit the nursery to inspect trees for health and structure prior to delivery and inspect trees again upon delivery. Follow Contra Costa County Public Works Department Landscape Standards and Guidelines (page 56) Tree Planting & Staking Detail ([https://www.contracosta.ca.gov/DocumentCenter/View/43771/DETAILS-2018-PDF?bidId=](https://www.contracosta.ca.gov/DocumentCenter/View/43771/DETAILS-2018-PDF?bidId=)) for materials and installation. Refer to Appendix J: Contra Costa County Landscape Standards, Tree Planting Details (page xx). It is also acceptable to replicate the successful best practices demonstrated by Groundwork Richmond and/or Pogo Park as shown in the City of Richmond Urban Forest Plan, Appendix K: City of Richmond Tree Planting Best Practices.

11. **Perform Underground Service Alert (USA)** to check for utility conflicts. Mark site with white paint to indicate location of proposed excavation, then contact Call California 811 ([https://www.california811.org/](https://www.california811.org/)) within two weeks of planting date, minimum of two days before planting, to log in and submit a ticket. If a concrete cut is required, ensure enough time between USA site and tree planting date to make sure this is completed. Input locations online (formerly at 811express.com), so that PG&E can assess the sites for any pipes, wires, etc. for safe planting. Call 800-642-2444 if the site is not in the database.

12. **Schedule Tree Planting.** Coordinate with the resident(s) and TWP staff to select a date for tree planting event. For large events, refer to Appendix E: Tree Planting Event Toolkit for a detailed planning calendar. Inform the county of tree planting date or volunteer event.

13. **Plant trees** with community volunteers and interns. Begin with a tree planting demonstration. Utilize Appendix F: Urban Tree Foundation Cue Cards for tree quality, planting, root management, and early tree training. Take photos during and after the event to document tree planting activities.

14. **Input tree data into tree tracking system.** Update the TreePlotter map in GIS to document trees planted for the NRWC Adopt-a-Tree project. Provide a table of tree ID#’s, locations (addresses and coordinates), species planted, date planted, and a photo of the planted tree.

15. **Review after-event follow-up and Tree Care Plan.** TWP is currently utilizing a Tree Care Plan implemented as part of the CalReLeaf grant project, and proposes to continue this successful model. Tree care will include a watering plan (weekly), weeding and mulching plan (monthly), tree protection plan (post-planting), and early tree pruning (three years after planting). TWP will support Adopters with hands-on tutorials to guide tree planting, watering and early tree care during the plant establishment period. Resource materials and references will be available. Refer to page 2 of the Adopt-A-Tree Application and Agreement (in Appendix C), Appendix G: Preserving California’s Urban Trees During Drought, and Appendix H: How to Prune Young Shade Trees.
The City of Richmond completed a Citywide Tree Inventory in 2013, however the North Richmond neighborhood was not included.
The Davey Tree data forms the basis for the assessment of Richmond’s existing urban forest described in this section and was converted to the ‘TreeTrak’ program developed for the City by MacNair & Associates. TreeTrak is a tree inventory software tool developed to standardize City tree data that meets Cal Fire grant requirements, incorporates existing historic data and integrates with i-Tree software. TreeTrak is a Filemaker database program that allows field data collection to be performed using an iPad with minimum expense for data collection equipment. The advantages of TreeTrak are that Filemaker is a cross-platform software allowing data to be compiled and viewed on either an Apple or PC. TreeTrak is non-proprietary program with no recurring fees for use. The program is easy to use and modify as needed. Tree data can be exported and imported in a wide range of database formats including Excel spreadsheets or other databases including iTrees. Further the use of the iPad allows for images and GPS collection in one device.

3.03 ANALYSIS BY ZONE

The City of Richmond established 13 zones based on neighborhood boundaries to record survey information (Figure 3.1). A brief analysis of each zone is provided in this section.

ZONE FOUR: IRON TRIANGLE, BELDING/WOODS, AND SHIELDS-REID NEIGHBORHOODS

Zone Four (Figure 3.5) consists of the Iron Triangle, Belding/Woods, and Shields-Reid neighborhoods as well as the area north of Wildcat Creek. This zone is bounded by Richmond Parkway to the north, Martin Drive to the west, Macdonald Avenue to the south, and 26th Street to the east. This Zone contains a variety of land uses including residential, parks, schools, the downtown Richmond business district, and commercial areas on Cutting Boulevard and near Interstate 580.

Covering approximately 1,500 acres, Zone Four supports approximately 3,400 street trees and over 4,800 other trees with a tree canopy cover of 5.8%. Trees are scattered throughout this zone; however, concentrations of City-owned trees are located along Richmond Parkway, Barrett Avenue, Macdonald Avenue, and around neighborhood parks including Belding-Garcia Park and Shields-Reid Park. Trees are also concentrated along Wildcat and San Pablo Creeks. The five most prevalent tree species in this zone include Callery pear (Pyrus calleryana), London planetree (Platanus x acerifola), coast live oak (Quercus agrifolia), coast redwood (Sequoia sempervirens), and myoporum (Myoporum laetum). The majority of trees in this zone (approximately 75%) are less than 12 inches in diameter.

Approximately 2,417 street tree opportunity sites of varying sizes were identified in Zone Four as part of the tree survey. These opportunity sites are concentrated along the streets in the Belding/Woods neighborhood and in the western portion of the Iron Triangle.
The Urban Forest Ecosystems Institute (UFEI) Urban Tree Detector Map of trees in the urban reserve of California in 2020. This map is based on NAIP imagery from 2020, processed by a convolutional neural network (CNN) which learned to detect trees from a collection of hand-annotated samples. The CNN takes NAIP imagery as input and outputs a confidence map indicating the locations of trees. The individual tree locations are found by local peak finding. Link: https://jventu09.users.earthengine.app/view/urban-tree-detector
**North Richmond’s Urban Forest Resources At a Glance**

**QUANTIFYING THE ANNUAL BENEFITS OF 30% URBAN TREE CANOPY COVER**

First, we must protect and preserve existing trees in the neighborhood. If each household plants two trees in North Richmond, we can achieve Tree Equity with benefits for human health, the environment, and the economy.

- **$33,568** Annual ecosystem service value
- **16** Green jobs supported
- **55,798.8 tons** Carbon Sequestered
  - Carbon sequestered equal to 10,909 gas-powered cars offset.
  - Carbon sequestered equal to 6,375 homes’ energy use offset.
- **565,000 gallons** Stormwater runoff prevented each year
  - Stormwater runoff prevented is equal to 28 standard swimming pools!
  - Rainfall intercepted each year: 2.1 million gallons.
- **91.5 lbs** Pm2.5 pollution removed annually
  - Pm2.5 pollution removed equals 42 gas-powered cars offset!
  - Nitrogen dioxide removed: 271 lbs
  - Sulfur dioxide removed: 91.6 lbs
  - Pm10 pollution removed: 601.5 lbs
  - Ozone removed: 1,832.1 lbs

**WHAT DOES OUR URBAN FOREST LOOK LIKE TODAY?**

- URBAN TREE CANOPY & LAND COVER
  - TREE CANOPY TODAY: 11%
  - TREE CANOPY TARGET: 30%
  - BUILT / PAVED SURFACE AREA

**THE WATERSHED PROJECT’S ADOPT-A-TREE PROJECT AREA**

- **URBAN TREE CANOPY**
  - Today, 340 TREES help shade the street in the project area including: 84 trees in the public right-of-way & 256 trees on private property

**OPPORTUNITY SITES**

- TWP identified 116 spaces to plant trees with residents in the Adopt-A-Tree project area

**TREE SURVEY DATA**

- **$33,568** Annual ecosystem service value
- **16** Green jobs supported
- **55,798.8 tons** Carbon Sequestered
  - Carbon sequestered equal to 10,909 gas-powered cars offset.
  - Carbon sequestered equal to 6,375 homes’ energy use offset.
- **565,000 gallons** Stormwater runoff prevented each year
  - Stormwater runoff prevented is equal to 28 standard swimming pools!
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  - Nitrogen dioxide removed: 271 lbs
  - Sulfur dioxide removed: 91.6 lbs
  - Pm10 pollution removed: 601.5 lbs
  - Ozone removed: 1,832.1 lbs

**WHAT CAN YOU DO TO SUPPORT A HEALTHY URBAN FOREST?**

- **PLANT A TREE**
  - Community groups will provide trees and resources for local tree planting projects
- **PROTECT EXISTING TREES IN THE NEIGHBORHOOD**
  - Encourage developers to save large trees & plant additional trees
- **WATER & CARE FOR YOUR TREES**
  - Provide extra water during periods of drought & extreme heat to reduce stress

**LEARN MORE:** Contact The Watershed Project at info@thewatershedproject.org today to get your free tree! Partner with your neighbors to plant trees in North Richmond and create a greener, safer, healthier, more walkable community.
North Richmond
Owner Occupied Properties

PRIORITY OUTREACH SITES FOR TWP ADOPT-A-TREE PLANTING SITES

*Parcels are assumed to be owner occupied if the Notification Address matches the Site Address.
PRIORITY OUTREACH SITES FOR PROTECTION OF EXISTING TREES

Source: Housing Authority of the County of Contra Costa – RFQ for Las Deltas Redevelopment Project – April 10, 2023 (Page 5)
Whether a farmer or a diamond merchant, anyone who produces or manages items of value keeps an inventory. The figures are not only a monitor of current value, but a constant guide to decisions. In community forestry, a street tree inventory can be a valuable tool for upgrading management and ensuring a healthy forest for the future.

There have been many people lost in the woods while carrying a compass, an instrument they thought would prevent such a happenstance. Once lost, they found there is nothing magic about carrying a compass — it must be working properly and the bearer must know how to use it.

Community tree inventories are much the same. It is often said that an inventory is the necessary first step toward good management of the tree resource. Yet, it is also well-known that in smaller cities, especially, once an inventory has been completed, the results often end up on the proverbial shelf to gather dust. Rather than being a help to management, the inventory is held up by taxpayers or an elected official as an example of wasted time and money.

In larger cities, an inventory is more often part of the daily routine of tree management. Its initial preparation is a major project, but once completed it is used regularly to plan work for city crews or contractors and to keep tabs on what is accomplished. On this scale, both the inventory and its use are work for experts.

In smaller communities there is more opportunity — and need — to adopt inventory-based tree management. It is toward this goal that Bulletin 23 is dedicated. In these pages are some of the basics needed to conduct a useful inventory. More instruction and professional guidance will be necessary before the work is actually conducted, but for the uninitiated or someone who has had a brief and bad experience with an inventory, the purpose here is to remove some of the mystery and point the way toward inventories that help. As can be seen on page 8, computer technology, combined with the results from years of research, has now made tree inventories more useful than ever.
Why Do An Inventory?

Knowing why an inventory is to be done is the single most important factor in determining success or failure of the project. Before trying to decide what kind of inventory to do or how to do it, make sure the tree board or forestry department has a crystal clear idea of how the inventory will be used in the ongoing management program.

Here are some of the things an inventory can achieve, with appropriate modifications needed depending on the size of the community. Most of these items form the basis of a management plan, a useful annual guide to efficient and effective action.

- Engenders public support, especially if citizens are involved as data collectors.
- Provides an accurate, insightful profile of the species and size (age) composition of the community forest.
- Reveals planting needs and suggests priorities to ensure balance and diversity.
- Identifies hazard trees that should be treated or removed, thereby preventing damage and costly litigation.
- Determines tree maintenance needs, providing a sound basis for how many people are needed to do the work, and how much it will cost.
- Provides information for defensible budget requests that compare in accuracy and sophistication with those from other municipal departments.
- Establishes the monetary value of community trees and convincingly shows the effects of budgeting and management on the resource value.
- Locates trees that are special because of their large size, unusual form, or connections with history. By pinpointing such specimens, special care can be provided and they can be included in educational materials.
- Allows keeping records of work performed to be used for:
  a. Reporting to the administration and elected officials,
  b. Better planning of time and crew size needed for tree maintenance,
  c. Ensuring systematic care of all trees, and
  d. Continuity of information when personnel changes occur.
- Enables quick and intelligent responses to property owner questions and requests.
- Provides factual data for coordination with other departments, such as planning and streets.
- Useful for monitoring planting success and growth of trees to enable evaluation of nursery sources.

An inventory of trees in the city rights-of-way offers multiple benefits to managers, tree boards, and residents.

Profiles can be used to foresee problems such as losing large numbers of trees at once as a result of insect or disease epidemics, ice or wind storms, or the limits of longevity being reached. Profiles can guide plans for replacements and new plantings that will mean healthier diversity through the use of suitable species that are currently underrepresented.

<table>
<thead>
<tr>
<th>Species in Community</th>
<th>Number of Trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bradford Pear</td>
<td></td>
</tr>
<tr>
<td>Elms</td>
<td></td>
</tr>
<tr>
<td>Maples</td>
<td></td>
</tr>
<tr>
<td>Hackberry</td>
<td></td>
</tr>
<tr>
<td>Red Oak</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diameter Classes</th>
<th>Number of Trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 6&quot;</td>
<td></td>
</tr>
<tr>
<td>6&quot;–12&quot;</td>
<td></td>
</tr>
<tr>
<td>13&quot;–18&quot;</td>
<td></td>
</tr>
<tr>
<td>19&quot;–24&quot;</td>
<td></td>
</tr>
<tr>
<td>&gt; 24&quot;</td>
<td></td>
</tr>
</tbody>
</table>

(Example: Condition)
Kinds of Inventories

There are many kinds of inventories and even more ways of conducting them. There is no single “right” inventory, although there are definitely correct procedures that must be followed in each one if the results are to be valid and useful. Selecting the kind of inventory that is best for your community depends on the reasons for conducting it. That is, how are the results to be used? Matching the purpose with the kind of inventory is a necessary step if the inventory is to be useful.

### SPECIFIC PROBLEM INVENTORY

This is simply a search for information related only to a specific problem. For example, it may locate all ash trees in preparation for arrival of emerald ash borers, or identify trees that could be hazards if not treated or removed. Its use is limited to the one problem rather than to broader management.

### OFF-STREET LOCATIONS

Trees in places like parks, golf courses, and arborets can be individually inventoried and keyed to a map with a location number. In more natural areas, where trees grow in dense groups, methods usually used gather information by sampling and generalizing rather than measuring all trees. For more information, see Bulletin No. 27: How to Manage Community Natural Areas.

### COVER TYPE SURVEY

Using aerial photographs or remote sensing, the extent and distribution of tree crowns (the canopy) can be quantified. This is useful for monitoring trends, determining energy-saving potential and other ecoservices, and establishing tree protection requirements for new developments.

### SAMPLING METHOD

If interested only in statistical summaries, such as species, size composition, available planting spaces, and similar data, a sample (often 10 percent) of the streets or blocks in the community may be all that is necessary. This kind of survey is relatively inexpensive and can be quite accurate if the trees are generally homogeneous. If not homogeneous, accuracy is still possible by dividing the city into sections that are reasonably alike, such as old and new areas, and taking samples in each. In either case, the key to accuracy is in making sure the sample is purely random.

If these conditions are met, results of the sample can be generalized to the community as a whole, and accurate profiles can be obtained.

### SOFTWARE PROGRAMS

Inventories can always be done on paper forms, but software available from a number of commercial and governmental sources makes the job much easier, more thorough, and less prone to errors. Contact your state urban & community forestry coordinator for guidance.

### COMPLETE INVENTORY — PERIODIC

In a complete survey, all street trees are inventoried and usually keyed to a specific location like a house address or a block. It is a detailed accounting of all trees. It is also the most time-consuming and expensive inventory, but the most accurate.

### COMPLETE INVENTORY — CONTINUOUS

This is the same as above except that a record is continuously maintained for each tree and planting site. Maintenance work is prescribed for each tree, and planting is scheduled for the empty sites. As work is accomplished, the records are updated. For managing a community forest and reducing the liability for accidents, this is the most valuable method.

It is therefore the one covered in this Bulletin.

NOTE: In any inventory, even a so-called continuous one, a re-survey is usually necessary every five to 10 years. This is to account for growth, unreported tree work, or removals and other changes in conditions. The exception is if all trees are visited and records updated, including diameter, within that period. In the long run, this could be the most economical, as well as effective, method.
What Data to Collect

Having decided the intended use of the inventory and the kind of inventory needed to collect the information, the next step is to determine exactly what information about each tree or site is needed. Considerable care should be taken with this task, as it is the foundation of your inventory system.

If your information will be fed into a computer for storage and reporting, “fields,” or blanks, will be displayed on the monitor according to the particular program being used. The data collected is entered in these spaces. However, fields should be ignored if the data to be entered is information you do not need. On the other hand, you may need to add fields or enter items in the “remarks” space to include something unique to your management needs.

Most data collection today is done with hand-held devices that allow downloading directly to a computer. If this is not possible, it may be necessary to collect the information on forms and enter it later into the computer. Design the form to coincide exactly with the order in which data is asked for on the computer screen. Omit entries that will not be used. Here is the information most commonly collected:

1 LOCATION

The location of each tree or empty space suitable for planting can be identified in a number of ways. Regardless of method and unless a high quality GPS unit is used, it is always a challenge trying to account for unique circumstances.

The objective is to identify the tree or plantable space in a way that it can be relocated by someone else at a later date. The method shown here ties each to a house or building number. For vacant lots, a fictitious number is given with a letter added, such as “X,” to alert others that there is no building there.

Trees and spaces (referred to as “site”) are numbered sequentially in the same direction as ascending house numbers. “S” for side and “R” for rear account for trees on corner lots or where the back of the house adjoins a second street. Trees on a median strip can be tied to a fictitious address corresponding to the hundred block. In the example at right, these trees would be recorded at 2600X Linwood Avenue as M1, M2, etc. When a tree or space has been omitted and must be added after the survey, alphabetical letters can be added in sequence (1A, 2A, etc.). If using a computer program, simply add the new tree or space, giving it the appropriate sequential number and the computer will renumber all the rest of the trees at that address.

It is important to include block information with each tree or planting site record so that all trees on a specific street can be retrieved from the database regardless of house number. For example, Tree S1 at 2619 Linwood Avenue could be included with trees reported (for pruning, let’s say) with all trees at that house, all trees at houses on Linwood Avenue, or all trees on Norwood Street.

Sometimes, a community’s management goals do not require knowing what trees are at a specific address. In this case, windshield surveys are used and trees are simply recorded by street or block. “Address” information on the illustrated inventory form would be omitted (as would any other data columns not needed). However, this method can still take advantage of computer programs. If the program requires street addresses in order to work, a street or block can be given a fictitious address, such as 2600X Linwood Avenue, with all trees on that street or block numbered sequentially.

A sequential numbering system must account for all trees and planting spaces in a way they can be relocated by work crews. In this system, all street trees and planting sites are tied to house addresses.
### 2 TREE INFORMATION

**Species**
- Locust, Black *Robinia pseudoacacia* LOCB
- Maple, Sugar *Acer saccharum* MPSU

A checklist of trees known to be in the community should be developed before the inventory begins. Abbreviations can be made up or adopted from a standard list such as one developed by researchers in the U.S. Forest Service. A good computer program will allow the user to switch back and forth between common and scientific names at will. Some require a numeric code for each species in order to manipulate or summarize data.

**Size**
- <3" 4"-6" 7"-12" 13"-18" 19"-24" 25"-30" >30"

Taking exact measurements of diameter slows data collection and is usually not important for managing the trees. Therefore, size categories with reasonable, but usually arbitrary, spreads should be used. Height and crown widths are usually unnecessary for management purposes. If needed, they can be obtained by measuring a sample of trees and correlating these measurements with diameter classes of species growing under the same general conditions.

![Diagram of tree measurement](image)

With practice, tree diameters can be estimated by eye with a high degree of accuracy. For greater accuracy or to check estimates occasionally, a Biltmore stick is the quickest way. This device resembles a yard stick but is calibrated to be read in inches of diameter.

**Condition**
- Excellent
- Good
- Fair
- Poor
- Dead

Condition classes can be described in general terms for data collectors. For higher precision, criteria in a publication such as *Guide for Plant Appraisal* can be used for classifying. Summaries of these data are good indicators of the health of the urban forest. When combined (by a computer program) with species, size, and location, they can also help estimate the monetary value of trees.

### 3 MAINTENANCE NEEDS

<table>
<thead>
<tr>
<th>Code</th>
<th>Work Needed</th>
<th>Prune</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Work Needed</td>
<td>Routine Prune</td>
</tr>
<tr>
<td>1</td>
<td>Plant</td>
<td>Training Prune</td>
</tr>
<tr>
<td>2</td>
<td>Remove</td>
<td>Remove Grate</td>
</tr>
<tr>
<td>3</td>
<td>Priority Prune (safety)</td>
<td>Remove Stump</td>
</tr>
</tbody>
</table>

This entry is the guide to planning work and determining budgets. The list of treatments or practices will depend on which ones are being used (or could be used) in the particular community. Each is coded to save space on data collection forms.

### 4 SITE INFORMATION

Some inventory programs have entry fields for information that describes site features important to management. The entry may call for a simple “yes” or “no,” or measurement. For example:

- Overhead Lines: Y
- Tree lawn: 8’
- Sidewalk Damage: N
- Land Use: 164

Land use, coded in the above example using a list of U.S. Forest Service code numbers, is used by the computer as the tree’s location to calculate tree value. If using plant appraisal protocols and the formula that considers size, species, condition, and location, a tree coded 164 (adjacent to privately owned, suburban residential property) would receive a higher dollar value than the same tree coded 324 (next to a freeway).

Again, use only that site information that helps meet an objective, or purpose, of your inventory. Otherwise, it is a waste of time. Also, this information is no substitute for actually inspecting a site before selecting planting stock or planning some other project.

### 5 OTHER INFORMATION

Insect and disease problems should be included when possible. This is a good way to discover the arrival of invasive pests, track their spread, and alert managers to the need for control measures.

A remarks category can also be used. This is helpful when the inventory is used for responding to phone calls from residents and maintaining work histories and plans. Remarks can include anything from the presence of a dangerous dog to noteworthy specimen trees. The drawback of a remarks field is that the information can usually not be summarized by computer or retrieved by topic unless it is coded and built into the program being used.
Managing the Project

A successful inventory project has four essential steps:

1 PLAN CAREFULLY

Besides carefully determining the objectives for the inventory and deciding what data must be collected to meet them, a form must be designed to allow for all conditions that may be encountered. This being virtually impossible, flexibility should be built in, such as allowing space for features or conditions to be added that were not anticipated. Part of planning is also developing comprehensive checklists or code sheets for data collectors, and making “rules” for how measurements will be taken, tree numbers will be assigned and other field situations will be handled to ensure consistency. Test everything by working through the trees on several blocks in different parts of the community, refining the procedures, and putting everything in writing for each data collector.

2 TRAIN

Whether using volunteers, summer youth crews, or paid employees, begin with a workshop session. Explain the “why” behind the project as well as procedural rules and your expectations of quality work. Then conduct a practice session on the streets, working with all individuals or teams. (Teams of two are most efficient when using non-professionals.) Be sure to explain a procedure for handling unknown species or other problems that require delayed data recording or the supervisor’s assistance.

To prevent problems from suspicious character reports, it helps to notify the city police and other city departments about when and where crews will be working. Identifying inventory workers with customized T-shirts, caps, or windbreakers also helps. Residents can be alerted through the news media. Crews should be briefed about how to handle inquiries from residents. A handout explaining the project is a good device and reduces the problem of crew members spending time in conversations.

3 SUPERVISE

The history of street tree inventories teaches that spot checking for accuracy and honesty is essential. The nature and intensity of supervision will vary widely, but in all cases it should be done regularly by the person responsible for the project. Brief, daily meetings can be a useful way to discuss problems and work out solutions.

4 USE!

Make sure that inventory reports are used at every opportunity. Continuous inventories need regular updating. This requires a clear procedure for editing or adding data. In larger communities, this may be daily attention by a clerk or technician to update the database as crew reports are turned in, permits for tree work are issued, or citizen calls are received. In smaller communities, updates are best done periodically but regularly (perhaps once a month) by a tree board member or the forester. Tree work, blowdowns, new plantings, and other changes need to be reflected promptly in the inventory.

Managing the Data

There are many computer programs available for data storage and use, each with different capabilities and limitations. The urban and community forestry specialist in your state forester’s office will be able to provide suggestions and possibly a list of suppliers. You might also want to search online for “street tree inventory.” When shopping for software, be sure to consider these criteria:

☐ Is it user-friendly? No previous experience should be necessary if you are using volunteers or do not have sophisticated technical assistance at your disposal.

☐ Does the vendor offer online technical support?

☐ Does the vendor have a track record, i.e., is it a stable, established company or organization? There is nothing as frustrating as getting your inventory set up, then needing technical assistance only to discover that the supplier is no longer available to help.

☐ Does the program offer a full range of abilities? For example, can it do everything described in this bulletin?

☐ Is editing — that is, correcting or updating data — fast and easy?

☐ Can it be expanded as the community and its forestry program grow and more sophisticated features are wanted?

☐ Is the cost well within your budget?

☐ Is there a guarantee of satisfaction offered?
There are many ways in which data can be reported. Once again, how it is done depends on the purpose of the inventory and how the data help meet management needs. Most frequently, the summaries help guide decisions in developing a management plan, illustrate budget requests, justify programs, or provide information to city officials for making public presentations or fielding inquiries.

Here are some examples of ways data can be reported:

• All trees at a single address

<table>
<thead>
<tr>
<th>Tree #</th>
<th>Species</th>
<th>Diameter</th>
<th>Condition</th>
<th>Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Red Oak</td>
<td>15&quot;-18&quot;</td>
<td>Good</td>
<td>Value $1,921</td>
</tr>
<tr>
<td>#2</td>
<td>Little Leaf Linden</td>
<td>1&quot;-12&quot;</td>
<td>Good</td>
<td>Value $1,225</td>
</tr>
<tr>
<td>#R1</td>
<td></td>
<td>(Planting DBH)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

• All trees on a block or street

On LINWOOD AVENUE from NORWOOD STREET to EAST STREET

<table>
<thead>
<tr>
<th>Tree #</th>
<th>Species</th>
<th>Diameter</th>
<th>Condition</th>
<th>Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2619</td>
<td>American Elm</td>
<td>15&quot;-18&quot;</td>
<td>Good</td>
<td>Priority Prune</td>
</tr>
<tr>
<td>2619</td>
<td>Silver Maple</td>
<td>15&quot;-18&quot;</td>
<td>Poor</td>
<td>Remove</td>
</tr>
<tr>
<td>2621X</td>
<td>Red Oak</td>
<td>15&quot;-18&quot;</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>2621X</td>
<td>Little Leaf Linden</td>
<td>1&quot;-12&quot;</td>
<td>Good</td>
<td>Routine Prune</td>
</tr>
<tr>
<td>2623</td>
<td>Dead</td>
<td>1&quot;-12&quot;</td>
<td>Dead</td>
<td>Remove</td>
</tr>
<tr>
<td>2623</td>
<td>Fi Crab Apple</td>
<td>&lt;6&quot;</td>
<td>Excellent</td>
<td>Remove State</td>
</tr>
</tbody>
</table>

• All trees needing specified maintenance

ALL TREES IN NEED OF PRIORITY PRUNE

On LINWOOD AVENUE

<table>
<thead>
<tr>
<th>Tree #</th>
<th>Species</th>
<th>Diameter</th>
<th>Condition</th>
<th>Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2619</td>
<td>American Elm</td>
<td>25&quot;-30&quot;</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>2690</td>
<td>Green Ash</td>
<td>12&quot;-18&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

On MARCY LANE

<table>
<thead>
<tr>
<th>Tree #</th>
<th>Species</th>
<th>Diameter</th>
<th>Condition</th>
<th>Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>Sugar Maple</td>
<td>7&quot;-12&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

• Species frequency for entire city

<table>
<thead>
<tr>
<th>Species</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Elm</td>
<td>1,550</td>
<td>40.3%</td>
</tr>
<tr>
<td>Green Ash</td>
<td>329</td>
<td>8.5%</td>
</tr>
<tr>
<td>Silver Maple</td>
<td>246</td>
<td>6.4%</td>
</tr>
</tbody>
</table>

• Species cross-tabulated with any feature

<table>
<thead>
<tr>
<th>Species</th>
<th>Excellent</th>
<th>Fair</th>
<th>Good</th>
<th>Poor</th>
<th>Dead</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ash</td>
<td>234</td>
<td>678</td>
<td>29</td>
<td></td>
<td></td>
<td>941</td>
</tr>
<tr>
<td>Buckeye</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Elm</td>
<td>10</td>
<td>1</td>
<td>5</td>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>Malus</td>
<td>2</td>
<td>3</td>
<td></td>
<td>5</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Norway Maple</td>
<td>3</td>
<td>2</td>
<td></td>
<td>5</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Norway Maple Crimson King</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Silver Maple</td>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dead</td>
<td>5</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>

Report Totals: 35 237 684 41 5 1,002

In short, any information that is collected in an inventory and entered into the computer's database can be retrieved and reported. From this rich storehouse of information, visual aids such as bar graphs and pie charts can be developed to enhance any presentation about the community forestry program.

SPECIES DISTRIBUTION

<table>
<thead>
<tr>
<th>Species</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. Elm</td>
<td>52%</td>
</tr>
<tr>
<td>N. Maple</td>
<td>13%</td>
</tr>
</tbody>
</table>

35%

GETTING ASSISTANCE

It is improbable that a good inventory can be planned or implemented without some professional assistance. The best starting point is to contact the urban and community forestry coordinator in your state forester's office. He or she can provide some direction as well as the names of consultants. The names of qualified professionals in your area are also available from the American Society of Consulting Arborists (301-947-0483) and the International Society of Arboriculture (217-355-9411).
What About GPS and GIS?

Inventory data collection and display are becoming easier and faster for communities with the funds and equipment to use global positioning systems (GPS) and geographic information systems (GIS). Hand-held or backpack instruments receive signals from satellites that pinpoint locations on Earth. Unfortunately, inexpensive GPS units may only be accurate to within several feet, not close enough for properly locating individual trees along a street. More costly units, however, provide the accuracy of survey work.

GIS allows trees or other data points to be displayed electronically on maps. Layers of features such as utilities, fire hydrants, street lights, or individual trees can be added or deleted with a keystroke. This technology provides a wonderful visual display of the community’s forest. Clicking on an individual tree can even be used to show all information about that tree.

THE i-TREE SUITE

The i-Tree suite of computer programs can help you collect and analyze data for a wide variety of purposes. These amazing tools can help you get additional information from your inventory that quantifies the value of your community’s green infrastructure. These programs have been developed by the U.S. Forest Service in cooperation with Davey Resource Group, the Arbor Day Foundation, the Society of Municipal Arborists, and the International Society of Arboriculture. The use of these programs is free, and they can be downloaded from itreetools.org. Additional applications are being added, but two fundamental programs are below:

i-Tree Streets focuses only on street trees. It can use either existing sample or complete inventory data or be used in the initial collection phase. The results quantify and put a dollar value on the environmental and aesthetic benefits of the community’s street trees. It also summarizes the age, size, and conditions of the trees and can be used to guide their future management.

i-Tree Eco looks at the entire urban forest — street trees, park trees, and privately owned trees. It relies on either a complete inventory or, more commonly, data from randomly located plots. It requires local air pollution and meteorological data but then quantifies the environmental effects and value of the urban forest. It also summarizes the overall structure of the trees (age, size, etc.).

FOR MORE INFORMATION

For sources of additional information about inventories, please visit arborday.org/bulletins.
The Power of Trees
CHANGING OUR WORLD ONE TREE AT A TIME

Trees Help our Family
- Trees bring energy and cost savings to residents
- Trees add value to our homes
- Trees improve quality of life
- Trees provide health and wellbeing

Trees Build Our Community
- Trees add savings and value to our community
- Trees strengthen our local economy
- Trees help to create a safer community
- Trees provide an atmosphere of improved learning

Trees Change Our World
- Trees support other vital natural resources
- Trees bring beauty to the environment
- Trees give stability to the land
- Trees create and filter the air we breathe
- Trees reduce pollution, ozone, and smog levels
- Trees improve our watersheds and drinking water
- Trees lower urban air temperature, improving public health during extreme weather events
- Trees control erosion and stabilize mountains and shorelines

Cal ReLeaf Benefits of Urban Trees flyer available online at https://californiareleaf.org/resources/benefits-of-trees/.
The Power of Trees
CHANGING OUR WORLD ONE TREE AT A TIME

Heart Healthy
Spending time around trees can reduce stress and lower blood pressure

Energy Savings
Trees decrease energy usage and cooling costs

Cleaner Air
Trees create oxygen by transforming CO₂ and leaves filter pollutants from the air, reducing asthma symptoms

Reduced Heat Extremes
Trees help cool down hot city streets and pavement and lower the risk of heat related illness

Improved Water Quality
Tree roots filter and control stormwater lowering water treatment costs

Increased Value
Trees increase the value of property, and reduce crime, including graffiti and vandalism

Improved Mental Health
Trees reduce stress, improve mood, and help children concentrate and learn

Healthy Foods
Fruits and nuts from trees provide healthy food for people and wildlife

Improved Quality of Life
Trees create beautiful and healthy places to live, work and play!

Cal ReLeaf Benefits of Urban Trees flyer available online at https://californiareleaf.org/resources/benefits-of-trees/.

Connecting People, Trees, and Communities

Cal ReLeaf
El poder de los árboles
CAMBIANDO NUESTRO MUNDO, UN ÁRBOL A LA VEZ

Los árboles ayudan a nuestra familia
- Los árboles traen ahorros de energía y costos a los residentes
- Los árboles agregan valor a nuestros hogares
- Los árboles mejoran la calidad de vida
- Los árboles proporcionan salud y bienestar

Los árboles ayudan a nuestra comunidad
- Los árboles agregan ahorros y valor a nuestra comunidad
- Los árboles fortalecen nuestra economía local
- Los árboles ayudan a crear una comunidad más segura
- Los árboles proporcionan una atmósfera de aprendizaje mejorado

Los árboles ayudan a nuestro mundo
- Los árboles sustentan otros recursos naturales vitales
- Los árboles aportan belleza al medio ambiente
- Los árboles dan estabilidad a la tierra
- Los árboles crean y filtran el aire que respiramos
- Los árboles reducen los niveles de contaminación, ozono y smog
- Los árboles mejoran nuestras cuencas hidrográficas y el agua potable
- Los árboles reducen la temperatura del aire urbano y mejoran la salud pública durante los fenómenos meteorológicos extremos

Cal ReLeaf Benefits of Urban Trees flyer available online at https://californiareleaf.org/resources/benefits-of-trees/.
El poder de los árboles
CAMBIANDO NUESTRO MUNDO, UN ÁRBOL A LA VEZ

Corazón saludable
Pasar tiempo alrededor de los árboles puede reducir el estrés y disminuir la presión arterial

Aire más limpio
Los árboles crean oxígeno al transformar el CO2 y las hojas filtran los contaminantes del aire, lo que reduce los síntomas del asma

Calidad del agua mejorada
Las raíces de los árboles filtran y controlan las aguas pluviales, lo que reduce los costos de tratamiento del agua

Mejora de la salud mental
Los árboles reducen el estrés y ayudan a los niños a concentrarse y aprender

Ahorros de energía
Los árboles reducen el uso de energía y los costos de enfriamiento

Calor extremo reducido
Los árboles ayudan a enfriar las calurosas calles y el pavimento de la ciudad y reducen el riesgo de enfermedades relacionadas con el calor

Valor incrementado
Los árboles aumentan el valor de la propiedad y reducen el crimen, incluido el graffiti y el vandalismo

Comida saludable
Las frutas y nueces de los árboles proporcionan alimentos saludables para las personas y la vida silvestre

¡Los árboles crean lugares hermosos y saludables para vivir, trabajar y jugar!

Cal ReLeaf Benefits of Urban Trees flyer available online at https://californiareleaf.org/resources/benefits-of-trees/.
ABOUT TREES IN COMMUNITIES

Where would we be without trees? These noble protectors give us so much and ask for so little. Their list of good deeds is long and generous: from cleaning our air and water, to keeping us nourished and healthy, to offering us an outdoor space that improves our mood, our health, and overall well-being.

TREES COMBAT URBAN HEAT ISLAND EFFECT BY:
- Cooling temperatures by up to 10 degrees and providing relief from extreme heat
- Reflecting up to 90 percent of the sun’s energy back into the atmosphere
- Shading homes and lowering electricity bills
- Lowering surface temperatures in parking lots by approximately 36 degrees

TREES ENHANCE AIR QUALITY BY:
- Lowering outdoor temperatures, which reduces energy consumption and the pollution it creates
- Capturing carbon emissions that lead to climate change. A single tree removes 22lbs of carbon per year
- Absorbing hundreds of thousands of metric tons of air pollution a year and replacing it with oxygen

TREES IMPROVE WATER QUALITY BY:
- Absorbing 25 to 35 percent of rainfall and controlling flooding better than manmade systems
- Restricting stormwater runoff from reaching our waterways
- Filtering heavy metals and other pollutants

TREES BUILD VIBRANT NEIGHBORHOODS BY:
- Inviting neighbors to go outdoors and connect with one another
- Reducing instances of vandalism, graffiti, and littering
- Lowering crime rates and acts of aggression
- Providing fruit to areas suffering from the effects of food deserts
- Growing a sense of community

TREES BOOST COMMUNITY HEALTH AND HAPPINESS BY:
- Encouraging physical activity and spending time outdoors
- Lowering blood pressure and stress, and improving mental well-being
- Reducing conditions that worsen respiratory problems like childhood asthma
- Supercharging the immune system
- Increasing mental focus, even in children with ADHD
- Helping patients recover quicker from surgery or illness

Trees are truly amazing. We’re proud to join your mission of uplifting your community through tree-plantings that engage and excite residents.

Citations for each statement can be found in the Arbor Day Foundation’s Case for Trees report at arborday.org.
DOOR HANGERS (ENGLISH / SPANISH)

English and Spanish Door Hanger templates from the Arbor Day Foundation marketing toolkit available online at https://www.arborday.org/programs/community-forestry-toolkit?ParamRefer=CommunityCanopy. Door hanger actual dimensions are approximately 4”x11”.

Everyone deserves the benefits of trees.
Help us plant more in our community.

EVENT NAME
Short description here.

EVENT DATE AND TIME

EVENT LOCATION
Please include the location(s). You can also provide a link to a map here.

CONTACT INFORMATION
First Name Last Name, Title, phone number, email, and how to get in contact.
www.webaddress.org

Your logo here
("Insert Graphic") Must be jpg or png file

In Partnership with
Arbor Day Foundation

UN ÁRBOL PUEDE SER PROTECTOR

Durante los calurosos meses de verano, los árboles nos ofrecen sombra, reducen la temperatura hasta en 10 grados e incluso disminuyen nuestras facturas de energía.

Todos merecemos los beneficios de los árboles.
Ayúdanos a sembrar más en nuestra comunidad.

Personaliza este espacio con la información de tu evento.

Coloca tu logotipo aquí

En colaboración con
Arbor Day Foundation
A TREE CAN BE AN ANSWER

TREES DO SO MUCH FOR US:

• Shade from trees can reduce energy bills
• Trees can improve some respiratory conditions
• Being around trees lowers blood pressure
• Incidents of vandalism and littering go down when there are more trees

Everyone deserves the benefits of trees. Join us in planting more for the health of our community.

EVENT NAME
Short description here..

EVENT DATE AND TIME
Please include the date and time here.

EVENT LOCATION
Please include the location(s).
You can also provide a link to a map here.

CONTACT INFORMATION
First Name Last Name, Title, phone number, email, and how to get in contact.

www.webaddress.org

Your logo here
("Insert Graphic") Must be jpg or png file

A Tree Can Be Flyer from the Arbor Day Foundation marketing toolkit available online at https://www.arborday.org/programs/community-forestry-toolkit/?ParamRefer=CommunityCanopy. Flyer actual dimensions are 8.5”x11”
UN ÁRBOL
PUEDE SER
LA RESPUESTA

A Tree Can Be Flyer from the Arbor Day Foundation marketing toolkit available online at https://www.arborday.org/programs/community-forestry-toolkit/?ParamRefer=CommunityCanopy. Flyer actual dimensions are 8.5”x11”
YARD SIGNS (MULTIPLE MESSAGE OPTIONS)

Yard sign (side one) Actual dimensions approximately 18” x 24”

Yard sign (side two) Actual dimensions approximately 18” x 24”

English and Spanish Yard Sign templates from the Arbor Day Foundation marketing toolkit available online at https://www.arborday.org/programs/community-forestry-toolkit/?ParamRefer=CommunityCanopy.
YARD SIGNS (MULTIPLE MESSAGE OPTIONS)

Yard sign (side one) Actual dimensions approximately 18” x 24”

Yard sign (side two) Actual dimensions approximately 18” x 24”

Trees bring us together by:

- Reducing vandalism and littering
- Encouraging outdoor activities
- Inviting socialization

Everyone deserves the benefits of trees. Help us plant more in our community.

Customize this space with your contact information.

SEE ALL A TREE CAN BE

In Partnership with Arbor Day Foundation

English and Spanish Yard Sign templates from the Arbor Day Foundation marketing toolkit available online at https://www.arborday.org/programs/community-forestry-toolkit/?ParamRefer=CommunityCanopy.
SOCIAL MEDIA MESSAGING

To successfully co-brand your message with the Arbor Day Foundation, please use the following tips:

Make sure to tag the Arbor Day Foundation in your post
- Facebook: @arborday
- Instagram: @arbordayfoundation
- Twitter: @arborday
- LinkedIn: @Arbor Day Foundation

Make sure to use appropriate hashtags in your post
- #ArborDay
- #PlantTrees
- #ATreeCanBe when A Tree Can Be statement is used in post copy. Use only ATreeCanBe in the hashtag without the defining word. Make sure to capitalize the first letter of each word in ATreeCanBe

Suggested Post Copy:

Use the sample post copy along with the images we’ve provided, or feel free to use your own photos of events happening in your community.

ENVIRONMENTAL JUSTICE

Image: A Tree Can Be Equitable Graphic (downloadable)
OR Personalize with community/event image

Post Copy: Trees clean the air, provide shade, serve up nourishment, and improve the health of our community. With the help of (@ Tag Arbor Day Foundation), we’re planting more trees in the neighborhoods that need them most. Everyone deserves the benefits of trees. Let’s grow green justice together. Join us at our next tree-planting event. (Enter your event information here)
Suggested Post Copy (continued)

URBAN HEAT ISLANDS

*Image:* A Tree Can Be Cool Graphic (downloadable)
OR Personalize with community/event image

*Post Copy:* With heatwaves intensifying, heat-related deaths are on the rise. Shade from trees cools our streets by up to 10 degrees. With the help of (@ Tag Arbor Day Foundation), we’re planting more trees in neighborhoods that need them. Let’s come together and protect all (how residents are referred to in your city, E.g. Bostonians). Join us at our next tree-planting event. (Enter your event information here)

FOOD INSECURITY

*Image:* A Tree Can Be Nourishing Graphic (downloadable)
OR Personalize with community/event image

*Post Copy:* Too many residents within our community don’t have access to fresh food or grocery stores. Trees can help. Not only will they display our neighborhood pride and care that invites new businesses in the area, but they grow fruits and nuts to share with everyone. We’re working with (@ Tag Arbor Day Foundation), to plant more trees in neighborhoods living with food insecurity. Let’s do what we can to put more food on our neighbors’ plates. Join us at our next tree-planting event. (Enter your event information here)

IMPROVED OVERALL HEALTH

*Image:* A Tree Can Be Supportive Graphic (downloadable)
OR Personalize with community/event image

*Post Copy:* From upping our feel-good hormones, to calming our minds, to inviting us on outdoor walks, to helping us breathe clean air, trees boost our mental and physical well-being. To keep our community healthy, we’re working with (@ Tag Arbor Day Foundation) to plant more trees in neighborhoods that need them most. Help us become happier and healthier by volunteering for our upcoming planting event. (Enter your event information here)

RAISING COMMUNITY PRIDE

*Image:* A Tree Can Be A Champion Graphic (downloadable)
OR Personalize with community/event image

*Post Copy:* Greenspace has been shown to increase a sense of pride in underserved neighborhoods, which helps lower rates of graffiti, vandalism, and littering. We’re working with (@ Tag Arbor Day Foundation) to inject beauty, hope, and unity into the areas that need them most. Everyone deserves the benefits of trees. Join us in sprucing up our community and sharing our pride with everyone who passes by. Volunteer at our upcoming tree-planting event. (Enter your event information here)
Adopt-A-Tree Application & Agreement

Dear North Richmond Resident,

Trees provide many benefits that improve neighborhood health, resilience and livability! If you would like to adopt a tree to be planted at your house adjacent to the sidewalk, please review, fill out the information below, and return it to The Watershed Project at 1327 South 46th Street, Building 155, Richmond, CA 94804 or email it to info@thewatershedproject.org.

Yes! I want to adopt and maintain a free tree!

Applicant’s Name ________________________________ Date ____________

Tree Address ___________________________ City _______________ Zip ____________

Mailing Address ___________________________ City _______________ Zip ____________

Primary Phone # ___________________________ Email ___________________________

The Watershed Project (TWP) is committed to selecting the right tree for the right location for greatest urban greening success and sustainability based on the County’s list of approved street trees. Not all sites are suitable for street trees. Adopt-A-Tree applications are evaluated by TWP. All trees on the list are subject to availability. The Adopt- A-Tree program has limited funding and operates off a waiting list.

Refer to the list of street trees recommended by The Watershed Project (TWP), based on the Contra Costa County Landscape Standards approved Street Tree List (Section E. Tree List), the City of Richmond’s approved street tree list, and input from local experts. See PG&E guidelines and Right Tree, Right Place, a publication by the Arbor Day Foundation, to learn more about appropriate tree selection considerations.

Resident responsibilities of adopting and maintaining a tree in perpetuity include:

• Watering the tree 2 to 3 times per week in the dry summer months, and weekly during spring and fall, as needed.

• Working with TWP staff to provide early tree care, ensuring that tree stakes and ties function correctly and are removed when appropriate.

• Coordinating with TWP staff for young tree training to ensure that branches do not cause obstructions, per Contra Costa County Landscape Standards.

• Providing tree care and other maintenance necessary to prevent injury to the public or other issues as a result of the tree.

• Notifying TWP of changes to circumstances affecting the maintenance of the tree, including but not limited to tree removal or address changes.

Yes, I have read this information, and I accept the responsibilities associated with adopting and maintaining a street tree described above.

☐ I want The Watershed Project staff to plant a tree at my residence

☐ I can provide water and early tree care, including trees planted within 5’ of the edge of sidewalk

☐ I would like to request water truck services to water the tree(s) for three (3) years

☐ I prefer a deciduous (loses leaves in the fall) tree

☐ I prefer an evergreen (green leaves all year)

☐ No Preference

Signature ___________________________ Date ________________
Adopt-A-Tree Care Instructions

Watering

You (the Property Owner/Signatory) are responsible for watering the tree during the 3-year establishment period. It is critical to the success of the tree that you follow the instructions herein.

How

1) On the top side of the provided watering bag (ArborRain Hydration System tree drip irrigation bag, 32 gallon), locate the black fill-hole and unscrew the cap all the way by turning it to the left.

2) Using a normal garden hose with tap water, rain water or grey water under pressure, insert the hose end into the black screw top fill-hole; grasp the rim of the fill-hole and hold it up above the level of the bottom of the brown watering bag and fill the bag until it will hold no more water --this will take several minutes. Replace and tighten cap by turning it to the right.

When

1) Fill the watering bag one week (7 days) and two (2) weeks (14 days) after your trees are planted. Please mark your calendar.

2) Then fill the watering bag every 28-30 days after planting starting March 1st to December or until periods of extended rain or nearly all tree leaves have dropped. No water should be required from December to March.

3) More frequent watering is not required unless requested by The Watershed Project. Watering too frequently facilitates root disease and can harm the trees.

Please do not water more frequently than listed above unless instructed by an arborist. If you think the tree requires more water or have questions about tree health, please contact The Watershed Project.

Weeding & mulching

Proper mulching Insulates the soil, helping to provide a buffer from heat and cold; Retains water to help the roots stay moist; Keeps weeds out to avoid root competition; and Prevents soil compaction. Keeping weeds and other competing plants away from the tree roots is very important for tree root development. Maintain a weed-free area at least 2 feet from the tree trunk (or a 4’ diameter area) around the base of the tree using wood chip mulch. Keep mulch 4 inches away from the tree trunk.

Tree Stakes

When your tree is initially planted, it may be staked to keep the young tree upright and provide some protection for the tree trunk. Once the tree roots get established, the tree will grow strong and anchor itself to the ground so that it is less vulnerable to windy conditions. Tree stakes made of wood may break or begin to rot at the base within several years. Remove tree stakes and ties that are broken or falling over.

Young Tree Pruning

The Watershed Project will assist Adopt-A-Tree program participants with pruning young shade trees to guide the tree to become a tall, straight tree with a straight trunk and a full, healthy crown with strong, well-spaced branches that is easy to maintain. When done correctly, young tree pruning allows for required clearances and site lines for street trees in the public right of way. Learn more at The Arbor Day Foundation (https://www.arborday.org/trees/bulletins/documents/001-summary.pdf).
Solicitud y Acuerdo del Programa Adopt-A-Tree (Adopta-Un-Árbol)

Estimado residente de North Richmond,

¡Los árboles brindan muchos beneficios que mejoran la salud, la resiliencia y la habitabilidad del vecindario! Si desea adoptar un árbol para sembrar en su casa adyacente a la acera, por favor revise y complete la información a continuación y devuelva el formulario a The Watershed Project en 1327 South 46th Street, Building 155, Richmond, CA 94804 o envíelo por correo electrónico a info@thewatershedproject.org.

¡Sí! ¡Quiero adoptar y mantener un árbol gratuito!

Nombre del solicitante ____________________ Fecha __________
Dirección del árbol ____________________ Ciudad __________ Código postal _________
Dirección postal ____________________ Ciudad __________ Código postal _________
Teléfono principal # ____________________ Correo electrónico ____________________

La organización sin fines de lucro The Watershed Project (TWP) se compromete a seleccionar el árbol adecuado para cada ubicación para asegurar el mayor éxito de la arboricultura urbana y la sostenibilidad según la lista de árboles para calles aprobadas por el Condado. No todos los sitios son adecuados para árboles de calle. Las solicitudes al programa Adopt-A-Tree son evaluadas por TWP. Todos los árboles de la lista están sujetos a la disponibilidad. El programa Adopt-A-Tree tiene fondos limitados y opera a través de una lista de espera.

Consulte la lista de árboles para calles recomendada por The Watershed Project (TWP), basada en la lista de árboles para calles aprobada por la Guía de Paisajismo del Condado de Contra Costa (Contra Costa County Landscape Standards approved Street Tree List - Sección E. Lista de árboles), la lista de árboles para calles de la Ciudad de Richmond y los aportes de expertos locales. Para obtener más información sobre las consideraciones para seleccionar árboles apropiados, consulte las directrices de PG&E y la guía Right Tree, Right Place, una publicación de la organización Arbor Day Foundation.

Las responsabilidades de los residentes cuando adoptan y mantienen un árbol a perpetuidad incluyen:

• Regar el árbol de 2 a 3 veces por semana en los meses secos de verano, y semanalmente durante la primavera y el otoño, según sea necesario.
• Trabajar con el personal de TWP para proporcionar cuidado inicial de los árboles, asegurando que las estacas y los lazos de los árboles funcionen correctamente y se eliminen cuando sea apropiado.
• Coordinar con el personal de TWP para recibir capacitación sobre el mantenimiento de árboles jóvenes para garantizar que las ramas no causen obstrucciones, según la Guía de Paisajismo del Condado de Contra Costa.
• Proporcionar cuidado de los árboles y mantenimiento necesario para evitar lesiones al público u otros problemas como resultado del árbol.
• Notificar a TWP de cambios en las circunstancias que afecten el mantenimiento del árbol, incluidos, entre otros, la eliminación del árbol o los cambios de domicilio.

Sí, he leído esta información, y acepto las responsabilidades asociadas con la adopción y el mantenimiento de un árbol para calles descrito anteriormente.

− Quiero que el personal de The Watershed Project siembre un árbol en mi residencia
− Puedo proporcionar agua y cuidado inicial de los árboles, incluidos los árboles sembrados a menos de 5 pies del borde de la acera
− Me gustaría solicitar servicios de camiones cisterna para regar el árbol durante tres (3) años
− Prefiero un árbol de hoja caduca (que pierde hojas en el otoño)
− Prefiero un árbol de hoya perenne (con hojas verdes todo el año)
− Sin preferencia

Firma ____________________ Fecha __________
Instrucciones para el cuidado de árboles del programa Adopt-A-Tree

Riego

Usted (el propietario/firmante) es responsable de regar el árbol durante el período de establecimiento de 3 años. Es fundamental para el éxito del árbol que siga las instrucciones de este documento.

Cómo

1) En la parte superior de la bolsa de riego provista (bolsa de riego por goteo de árbol de ArborRain Hydration System, 32 galones), ubique el orificio de llenado negro y desenrosque la tapa completamente girándola hacia la izquierda.

2) Usando una manguera de jardín normal con agua del grifo, agua de lluvia o aguas grises bajo presión, inserte el extremo de la manguera en el orificio (de llenado) de tapón de rosca negro; Agarre el borde del orificio de llenado y sosténgalo por encima del nivel de la parte inferior de la bolsa de riego café y llene la bolsa hasta que no pueda contener más agua, esto tomará varios minutos. Reemplace y apriete la tapadera girándola hacia la derecha.

Cuando

1) Llene la bolsa de riego una semana (7 días) y dos (2) semanas (14 días) después de plantar sus árboles. Por favor, marque su calendario.

2) Luego llene la bolsa de riego cada 28-30 días después de sembrar a partir del 1 de marzo hasta diciembre o hasta que inicien los periodos de lluvia prolongada o casi todas las hojas de los árboles hayan caído. Normalmente no se requiere agua de diciembre a marzo.

3) No se requiere un riego más frecuente a menos que lo solicite el The Watershed Project. El riego con demasiada frecuencia facilita la enfermedad de las raíces y puede dañar los árboles.

Por favor, no riegue con más frecuencia de lo mencionado anteriormente a menos que se lo indique un arborista. Si cree que el árbol requiere más agua o tiene preguntas sobre la salud del árbol, comuníquese con The Watershed Project.

Desierbe y mantillo

El acolchado adecuado aísla el suelo, ayudando a proporcionar un amortiguador del calor y el frío; Retiene el agua para ayudar a que las raíces permanezcan húmedas; Mantiene las malas hierbas fuera para evitar la competencia de raíces; y previene la compactación del suelo. Mantener las malezas y otras plantas competidoras lejos de las raíces de los árboles es muy importante para el desarrollo de las raíces de los árboles. Mantenga un área libre de malezas al menos a 2 pies del tronco del árbol (o un área de 4 pies de diámetro) alrededor de la base del árbol usando mantillo de astillas de madera. Mantenga el mantillo a 4 pulgadas de distancia del tronco del árbol.

Estacas de árboles

Cuando su árbol se siembra inicialmente, se puede estacar para mantener el árbol joven en posición vertical y proporcionar cierta protección para el tronco del árbol. Una vez que las raíces del árbol se establecen, el árbol crecerá fuerte y se anclará al suelo para que sea menos vulnerable a las condiciones de viento. Las estacas de árboles hechas de madera pueden quebrarse o comenzar a pudrirse en la base dentro de varios años. Retire las estacas y ataduras de los árboles que estén rotas o cayéndose.

Poda de árboles jóvenes

ENCROACHMENT PERMIT

Permit to do work in accordance with Title 10 of the Ordinance Code of Contra Costa County, County Standard Plans and Specifications, and any Special Requirements shown or listed herein. Read both sides of this Permit and all the attachments carefully. Keep this Permit at the work site.

Permittee:

Contractor:

Address:

Address:

City/State/Zip:

City/State/Zip:

Contact Person:

Telephone No.:

Fax No.:

Email Address:

Cell Phone No.:

Expiration Date:

Start Date:

Projected Completion Date:

Site Address:

APN:

Latitude:

Longitude:

Items Attached or Referred to Herein and Made Part Hereof:

General Permit Conditions Attachment; Special Road Encroachment Permit Conditions; Preserving Survey Monumentation;

The Permittee agrees to save, indemnify and hold harmless the County of Contra Costa, its officers, employees and agents from all liabilities imposed by law by reason of injury to or death of any person(s) or damage to property, including without limitation liability for trespass, nuisance or inverse condemnation, which may arise out of the work covered by this permit and does agree to defend the County, its officers, employees and agents against any claim or action asserting such a liability. Accepting this permit or starting any work hereunder shall constitute acceptance and agreement to all of the conditions and requirements of this permit and the ordinance and specifications authorizing issuance of such permit.

Signature of Permittee:

Date:

Print Name:

By:

Date:

For:

Robert B. Hendry III, Senior Engineering Technician

B. M. Balbas, Public Works Director, Contra Costa County

Work Completed

Expire

APPLY PENALTY – No Inspection Requested

Inspector:

Date:

Date:

Date:

"Accredited by the American Public Works Association"

255 Glacier Drive, Martinez, CA 94553-4825

Office (925) 313-2000 • Direct (925) 374-2136 • Fax (925) 313-2021 • email: pw.permits@pw.cccounty.us

www.cccpublicworks.org
STANDARD ROAD ENROCCHMENT PERMIT CONDITIONS

I. GENERAL INSTRUCTIONS

1. ALL WORK MUST BE INSPECTED. ARRANGE for an INSPECTION by phoning or email by at least two working days before you begin work. If you cannot reach the inspector contact the construction office at (925) 313-2320. WORK DONE WITHOUT NOTIFICATION IS SUBJECT TO REJECTION AND/OR A PENALTY OF $100. Work done without inspection may have to be removed and reconstructed. You must schedule a FINAL INSPECTION by phoning your inspector. Refunds of deposits and/or bonds will be processed 90 days from the date the permit was signed off by the Public Works Construction Inspector. A signed off permit from another permitting agency or utility company does not guarantee the work performed under this permit has been completed satisfactorily.

2. PROTECTION - Provide and maintain enough barricades, lights, signs, cones, flaggers and other safety measures to protect the public, in accordance with the current California Manual on Uniform Traffic Control Devices.

3. TRAFFIC - A County road may not be closed to public traffic without the approval of the Board of Supervisors. Unless noted otherwise in attached General or Special Road Encroachment Permit Conditions, keep a minimum of one 10' wide traffic lane open to traffic while working; at all other times, two 10’ wide lanes shall be open.


5. UTILITIES - Utility relocations are the responsibility of the permittee.

6. UNDERGROUND SERVICE ALERT (USA) - Must be contacted prior to excavating in a County road right of way. Telephone 811. Any work found in progress without a valid USA number will be shut down and the roadway cleared. All USA and/or temporary survey pavement markings shall be removed by the permittee at the completion of work to the satisfaction of the County Public Works construction inspector.

7. SURVEY MONUMENTS SHALL BE PROTECTED. Any survey monuments removed, or disturbed, shall be replaced using surveying practices acceptable to the County Surveyor, who can be contacted at the Public Works Department at (925) 313-2000.

8. FIELD CHANGES - Any modification due to field conditions must be approved by the inspector.

9. IF WORK is performed without a permit, the fee shall be double the amount per fee schedule or a minimum of $300. All work performed without a permit is subject to removal and/or reinstallation.

10. STAFF CHARGES – Permittee is responsible for all staff charges associated with the permit. Any exceptions must be resolved before the permit is issued. Permits will not be signed off as complete until all the review and inspection charges are paid in full.

II. SPECIAL REQUIREMENTS - DRIVEWAYS (DRIVEWAY SHALL BE CONSTRUCTED FROM EDGE OF PAVEMENT TO PROPERTY LINE)

1. Minimum driveway construction shall consist of 2" of asphalt pavement on 6" of Class 2 Aggregate Base. Concrete driveways within the County road right of way shall consist of a minimum thickness of 6" of Class 2 concrete over 3” of Class 2 Aggregate Base. The driveway is to be sloped to prevent storm water runoff to flow onto the County road and shall not interfere with roadside drainage or cause erosion or deposition of silt.

2. The driveway location shall comply with County Standard Plan No. CA70, shall not interfere with a legal encroachment or create a hazard or nuisance, and shall be spaced to make maximum street parking available.

3. a. Where driveways connect to County roads without curbs, shape a valley gutter across the driveway. The flow line shall match the flow line of existing roadside ditch.

b. Install a culvert for full width of driveway. This culvert is to be laid to the flow line grade of existing roadside ditch.

4. Minimum driveway construction shall consist of 2" of asphalt pavement on 6" of Class 2 Aggregate Base. Concrete driveways within the County road right of way shall consist of a minimum thickness of 6" of Class 2 concrete over 3” of Class 2 Aggregate Base. The driveway is to be sloped to prevent storm water runoff to flow onto the County road and shall not interfere with roadside drainage or cause erosion or deposition of silt.

5. Existing curb and gutter, or curb, gutter and sidewalk shall be removed for full width of driveway with saw cut at next nearest expansion joint or score mark. (See County Standard Plan No. CA 74) A form board must be used at the gutter lip and the pavement restored with asphalt concrete. Sidewalk and curb which is replaced shall be dowelled. (See County Standard Plan No. CA 74)

6. a. Where driveways connect to County roads without curbs, shape a valley gutter across the driveway. The flow line shall match the flow line of existing roadside ditch.

b. Install a culvert for full width of driveway. This culvert is to be laid to the flow line grade of existing roadside ditch. The minimum culvert diameter is 18”.

7. Driveway grade breaks shall comply with County Standards (See County Standard Plan No. CA 20)

8. All broken curbs, gutters and sidewalks shall be completely removed by saw cut at nearest expansion joint or score mark and replaced to true grade and cross-section. The new curb and sidewalk shall be dowelled. (See County Standard Plan No. CA 74)

III. SPECIAL REQUIREMENTS - STREET CUTS (See County Standard Specifications for Detailed Requirements).

1. TRENCH EXCAVATION – Trench excavation and backfill requirements shall follow County Standard Plan No. CJ01. Prior to the start of the work covered under this encroachment permit:

   a. Any deviation proposed from the backfill material or asphalt concrete specified on the Standard Plan shall be approved by the Public Works Department’s construction inspector.

   b. Any deviation proposed from the trench excavation specified on the Standard Plan shall be approved by the Public Works Department’s construction inspector.

2. The Permittee shall not excavate trenches in advance of pipe placement. No more trench shall be excavated than can be finished, including pipe placement, backfill and temporary paving on the same day. Shoring shall comply with current CAL-OSHA safety orders.

3. For trench backfill in other road right-of-way areas, the trench backfill shall consist of existing material or suitable backfill material as approved by the inspector. The trench backfill shall have a minimum relative compaction of 90 percent.

   NO JETTING is allowed under any paved roadway or within a distance of 4’ from the edge of existing pavement. Backfill shall be compacted by impact, vibration or any combination of these. Jetting will be allowed only when more than four feet from the pavement and when the backfill and trench are suitable for jetting and shall be supplemented with mechanical compaction to obtain required relative compaction.

4. TEMPORARY PAVING - Temporary paving (or permanent paving) shall be placed at the end of each work day and shall have a minimum thickness of 1.5” of 3/8-inch, Type A asphalt concrete. The permittee shall maintain the temporary trench paving until the permanent paving is performed.

IV. SPECIAL REQUIREMENTS - SIDEWALK DRAINS

1. Install a 3" inside diameter non-corrosive pipe through curb or through curb and sidewalk. One panel of sidewalk, curb and gutter, or where there is no sidewalk, 1’ of curb only (don’t remove gutter) to be removed by a saw cut. Pipe flow line shall match gutter flow line, and pipe shall be cut off flush with face of curb. Sidewalk concrete shall encase pipe in 3” concrete jacket. Replace curb, gutter, sidewalk and pavement to match adjacent improvements. (See County Standard Plan No. CD06)
Instructions for Completing the Encroachment Permit Form

The applicant shall provide all the information on the encroachment permit except for the shaded areas shown on the attached sample encroachment permit, which must be completed by the County representative.

1. **Type of Permit:** (Small/Large/Utility): Determine what type of permit to issue based upon the scope of work and the amount of inspection required. Small encroachment permits generally include: sidewalks, driveways, street cuts for sewer laterals or utility service connections with trenches in the pavement <50’, traffic control, bicycle races, and any small project that does not require engineering review and no more than one hour of inspection time. Large encroachment permits generally require engineering review, involve excavations with multiple trenches or a single trench >50’ in length, will have multiple inspections and may involve multiple sites, may be associated with an entitlement such as Minor or Major Subdivision, Land Use Permit, Development Permit, or Road Acceptance. Utility encroachment permits are for any application applied for by a public utility company whether the project is small or large in nature. This may also include municipalities or political bodies or jurisdictions that the County would bill for the encroachment permit as opposed to requiring a deposit. The Permit Violation box should be checked when work is started/ performed prior to the issuance of the permit. May also be used by the construction inspector when the permittee fails to contact the construction inspector for an inspection.

2. **Work Order/Job #:** This is where the permittee can reference their work order or job number for the project.

3. **County Project/W.O.:** If the encroachment permit is being issued in relation to a County project then the County project number should be recorded here. “No Fee” permits must have a work order number recorded here to bill the permit and inspection fees against.

4. **Permit Fee/Deposit:** Small encroachment permits are charged a flat fee. Permit Fee $50, Inspection Fee $250 (per site/visit), for work involving excavation in the right of way a cash bond of $1000 (per trench) is required. There are times when a small encroachment permit is issued for a project that involves multiple sites in close proximity or multiple trenches for the different utilities to connect their services. In these cases the inspection fee is multiplied by the number of sites and the cash bond would be multiplied by the number of trenches. Large encroachment permits are charged time and materials so an initial deposit of $2000 is collected. On the permit $1000 is written as the permit amount and $1000 is written as the inspection amount. Cash bonds are typically required with the amount to be determined upon review of the improvement plans. Utility encroachment permits are billed time and materials. The permit/inspection amount is written as “To Be Billed”.

5. **Receipt Number:** All of the receipt numbers associated with the encroachment permit are recorded here.

6. **Fed Tax Id #:** A Federal Tax Identification Number is required for all checks accepted as cash bonds in the amount $5,000 or greater. (If the check is from a private party instead of from a corporation then a Social Security Number is required).

7. **Permit Number:** The next available permit number from the encroachment permit log is entered here.

8. **Area:** The County is currently divided into four inspection areas with letter designations, A, B, C, or D. A different construction inspector is assigned by Construction to each area. Enter the appropriate letter on the permit.

9. **USA:** All permits for excavation within the County road right-of-way require a current Underground Service Alert (USA) Number. Telephone 811. If the applicant has already obtained the USA number enter it on the permit otherwise they must provide it to the construction inspector.

10. **Road Number:** Look up the road number from the road log and enter it on the permit form.

11. **Permittee:** Enter the name and the mailing address of the Permittee. If a contractor is applying for the permit on behalf of a property owner/developer/utility company then the contractor should be listed on the permit as both the Permittee and Contractor unless the property owner/developer/utility company has signed the encroachment permit. Then the property owner/developer/utility company should be listed as the Permittee.

12. **Contractor:** Enter the name and the mailing address of the Contractor. Include the State of California Contractors License Number.

13. **Contact Person:** Enter the name of the Contact person for the project and their telephone, fax, and cell phone numbers as well as their email address.

14. **Expiration Date:** Enter the expiration date on the permit. Typically, small encroachment permits are issued with an expiration date 30 days from the date of issue. ENCROACHMENT PERMITS ISSUED FOR SIDEWALK
REPLACEMENT PER THE HAZARD ABATEMENT LETTERS ISSUED BY MAINTENANCE SHALL HAVE AN EXPIRATION DATE NO LONGER THAN 30 DAYS FROM THE DATE OF ISSUANCE. Large and utility encroachment permit and in certain circumstances, small encroachment permits may have an expiration date more than 30 days from the date of issuance dependent upon the nature of the work. The permittee must submit a detailed construction schedule with the encroachment permit application in support of the request for additional time.

**Permitted Activity:** Indicate whether the proposed work will involve excavating in curb, gutter, and sidewalk and/or the AC pavement but checking the appropriate boxes. Enter a description of the work proposed within the County right-of-way. List all facilities to be installed, removed, or replaced including their dimensions. Include the size and/or linear footage of all excavations within the County right-of-way.

**Emergency Contact Person:** All permits involving excavating within the road right of way require the permittee to list an emergency contact person available 24 hours per day, 7 days a week, with the authority to respond to emergency situations when contacted by the County.

**Start Date:** Enter the proposed start date of the project. **Projected Completion Date:** Enter the projected completion date of the project. This should be based on the actual number of working days required to complete the project within the County rights-of-way. The permittee must submit a detailed construction schedule with the encroachment permit application when there is more than 30 calendar days between the proposed start date and the projected completion date. *The actual permit expiration date assigned by the County may differ from the projected completion date suggested by the permittee.*

**Site Address:** Enter the site address of the project. Use a distance to the nearest cross street if there is no address at site. **Latitude and Longitude:** Use GIS information to pinpoint a coordinate for the proposed work.

**APN:** Enter the Assessor’s Parcel Number.

**Construction Inspector:** Based upon the location of the project, enter the name, telephone number, and e-mail address of the construction inspector that is assigned by Construction to work in that area of the County.

**Attachments:** Check the box of the appropriate attachment(s) and/or list the name of any attachments not already shown on permit. **General Permit Conditions** are a set of pre-generated general permit conditions that serve as a starting point for most over the counter permits and can be modified as necessary. **Special Road Encroachment Permit Conditions** are a set of specific encroachment permit conditions generated for a permit application based upon the review of the improvement plans. **Preserving Survey Monumentation** is a standard attachment for all permits involving excavation or other work with the potential to disturb survey monumentation.

After reading the permit and permit conditions the **Permittee signs, Dates** and **Prints their name** on the encroachment permit.

**Signature:** After the permittee has signed the permit, the permit fees/deposit/bonds are collected and receipted, plans reviewed and permit conditions written, the Public Works representative issues the permit with their signature.
Permission for Planting & Maintenance of Trees

To be completed in conjunction with the owner of the property (i.e. city, county, school or special district) on which the tree planting and maintenance will take place.

This is to certify that [property owner, e.g., city, county, state]

The legal owner of the property located at [address or location of property]

Hereby grants permission to [The Watershed Project] (organization applying for grant)

to plant and maintain trees, for at least three years after all project trees have been planted on said property as described in the project proposal entitled [North Richmond Watershed Connections Project (Coastal Conservancy Prop 1 Grant #xx-xxxx)]

[Signature of property owner’s authorized representative]  [Date]

[Title]  [Telephone]

[Print Name of owner’s authorized representative]
The Right Tree for the Right Place

TREES PROVIDE MULTIPLE BENEFITS
The trees in our neighborhood provide many benefits that make life better. We enjoy the beauty and shade trees provide, but did you know they also absorb stormwater, help clean the air, mitigate noise and glare, provide windbreaks and privacy? They also add value to your property and make neighborhoods more walkable which helps improve mental and physical health for residents.

SELECTING JUST THE RIGHT TREE TO ADOPT
Think about what the tree will look like at maturity and how much space it needs to grow to its full potential.

*indicates Native tree species

FACTORS TO CONSIDER
The Purpose of the Tree will impact the suitability of different tree species, whether used for shade, aesthetic beauty, wind protection, screening, or other purposes.

Size and Location of the tree, including available space for roots and branches, affects the decision on which species to plant.

Crown form or shape varies among species, including round, oval, columnar, V-shaped or pyramidal. Consider how the shape of the tree works in the space available.

PLANT THE RIGHT TREE IN THE RIGHT PLACE
Plant taller trees away from overhead utility lines

LEARN MORE: This sheet is an adaptation of the Arbor Day Foundation’s Tree City USA Bulletin: The Right Tree for the Right Place (pdf) and Planting the right tree in the right place (website) at https://www.arborday.org/trees/righttreeandplace/
NORTH RICHMOND ADOPT-A-TREE PROJECT TREE LIST

APPROVED STREET TREES

Section 1: Tree species, varieties, and cultivars that do well in North Richmond sidewalk locations.

Small Trees
- Callistemon viminalis / Weeping Bottlebrush
- x Chitalpa tashkentensis ‘Pink Dawn’ / Pink Dawn Chitalpa
- Magnolia grandiflora 'Little Gem' / Dwarf Southern Magnolia
- Prunus cerasifera 'Krauter Vesuvius' / Krauter Vesuvius Plum

Medium Trees
- Arbutus unedo ‘Marina’ / Marina Strawberry Tree
- Crataegus phaenopyrum / Washington Hawthorn
- Pistacia chinensis ‘Keith Davey’ / Chinese Pistache

Large Trees
- Fraxinus angustifolia (syn. Oxycarpa) ‘Raywood’ / Raywood Ash
- Ginkgo biloba ‘Autumn Gold’ / Ginkgo
- Platanus x hispanica (syn. P x acerifolia) ‘Bloodgood’ ‘Columbia’ ‘Yarwood’ / Sycamore
- Quercus agrifolia / Coast Live Oak
- Quercus suber / Cork Oak
- Ulmus parvifolia ‘Frontier’ or ‘Drake’ or ‘Pioneer’ / Chinese Elm

OTHER RECOMMENDED TREES

Section 2: Local Natives - these are tree and arborescent shrub species that are appropriate for private property, public parks, open spaces, and riparian areas. Local native trees and shrubs are optimum for providing wildlife habitat throughout the city.

- Acer circinatum / Vine Maple
- Alnus rhombifolia / California White Alder
- Aesculus californica / California Buckeye
- Ceanothus 'Ray Hartman' / California Wild Lilac
- Cercis occidentalis / Western Redbud
- Garrya elliptica / Silk Tassel
- Heteromeles arbutifolia / Toyon
- Platanus racemosa / Western Sycamore
- Prunus ilicifolia subsp. lyonii / Catalina Cherry
- Quercus agrifolia / Coast Live Oak
- Rhamnus (Frangula) californica / California Coffeeberry
- Sambucus mexicana / Blue Elderberry
- Sequoia sempervirens ‘Aptos Blue’ or ‘Soquel’ / Coast Redwood Tree
- Umbellularia californica / California Bay Laurel

Section 3: Fruit Trees By planting fruit trees, community members can attract pollinators and increase access to healthy, home-grown food. Many fruit tree species are known to thrive in North Richmond neighborhoods, including: Apple, Apricot, Avocado, Fig, Lemon, Olive, Pear, and Persimmon.

To find out more about fruit, nut and grape varieties for Contra Costa, visit UC Master Gardener Program of Contra Costa website (https://ccmg.ucanr.edu/EdibleGardening/FruitsContraCosta/) and consult the list for varieties that do well in zone 17. For free fruit trees and more local information, contact Urban Tilth online (https://urbantilth.org), by phone (510.232.0911), via email (info@urbantilth.org), or visit the North Richmond Farm at 323 Brookside Dr. Richmond, CA 94801.
PLANT DESCRIPTIONS

Section 1: Tree species, varieties, and cultivars that do well in North Richmond sidewalk locations.

SMALL TREES (Less than 20’ tall at maturity)*

**Callistemon viminalis / Weeping Bottlebrush**

DESCRIPTION The Weeping Bottlebrush is a small tree with spreading branches that grows to 15’-25’ in height. It produces narrow clusters of dark red flowers, and performs best with average to occasional summer watering. TYPE Evergreen Tree

HEIGHT 12-25’ WIDTH 10-20’ SUN Full, Half’ WATER Low

SOIL TYPE Sandy, Clay, Loam, Rocky, Unparticular. GROWTH RATE Fast SUNSET ZONES 8-24

PLANTING AREA 2’ to 5’ CO2 15,365.20 (EBMUD, Plantmaster.com, Harlow & Coate, 2004)

x Chitalpa tashkentensis ‘Pink Dawn’ / Pink Dawn Chitalpa

DESCRIPTION This deciduous tree grows rapidly to 15’-25’ high and wide, producing long, pointed, deep green leaves. Upon these leaves grow the pale pink, trumpet-shaped flowers with yellow throats. From spring through fall, these flowers appear in showy clusters. Grayish white bark is attractive and prominent during winter. Birds and hummingbirds love this tree. It is usually multi-trunked. It does best in full sun and becomes drought tolerant when established. It does not tolerate coastal areas. TYPE Deciduous Tree

HEIGHT 12-25’ WIDTH 12-25’ SUN Full WATER Very Low

SOIL TYPE Sandy, Clay, Loam, Rocky, Unparticular GROWTH RATE Fast SUNSET ZONES 3–24 PLANTING AREA 5’ to 10’ (Harlow & Coate, 2004)

**Magnolia grandiflora 'Little Gem' / Dwarf Southern Magnolia**

DESCRIPTION Small stature, compact variety of the evergreen Magnolia. Fragrant, large flowers and shiny dark green leaves are very attractive and do drop and litter throughout the year. The dwarf Magnolias that we offer through our shade tree program are smaller than our average trees, about 2.5 feet tall when you receive them. HEIGHT 15-20' WIDTH 10-15' SUN Full, half WATER Moderate

SOIL TYPE Sandy, Clay, Loam GROWTH RATE Slow-moderate SUNSET ZONES 4 - 12, 14–24 PLANTING AREA 2 to 5’ (UEFI)

**Prunus cerasifera 'Krauter Vesuvius' / Krauter Vesuvius Plum**

DESCRIPTION The 'Krauter Vesuvius' is a smaller growing, flowering plum that grows to 18’ high by 12’ wide. Its leaves are purplish black throughout the growing season, and the flowers have a light pink color. TYPE Deciduous Tree

HEIGHT 18' WIDTH 12' SUN Full WATER Moderate

SOIL TYPE Sandy, Clay, Loam, Rocky, Unparticular GROWTH RATE Moderate SUNSET ZONES 2–22 PLANTING AREA 5 to 10’ (UEFI & Plantmaster.com)
**MEDIUM TREES** (20-35' tall at maturity)

**Arbutus unedo ‘Marina’ / Marina Strawberry Tree**

**DESCRIPTION** This plant is either a small tree or large evergreen shrub. It has a red-brownish trunk and branches that are twisted with age. The dark green leaves have red stems. It has clusters of small, white or greenish-white urn shaped flowers and small, red and yellow fruit that has a strawberry like texture from which the common name is derived. It has slow to moderate growth to 15' with the same spread. It can become damaged in severe winters.

**TYPE** Evergreen Tree

**HEIGHT** 25-40'

**WIDTH** 12-25', 25-40'

**SUN** Full, Half;

**WATER** Low

**SOIL TYPE** Sandy, Clay, Loam, Rocky, Unparticular

**GROWTH RATE** Moderate, Slow (Harlow & Coate, 2004)

**Crataegus phaenopyrum / Washington Hawthorn**

**DESCRIPTION** White flowers in early June start the color show. Reddish-purple leaves turn dark green, then orange, scarlet or purple. Small, glossy red fruits stay on tree into winter, and are preferred by songbirds.

**TYPE** Deciduous Tree

**HEIGHT** 25'-30'

**WIDTH** 20-25'

**SUN** Full

**WATER** Moderate

**SOIL TYPE** Acidic, alkaline, loamy, moist, sandy, well-drained, wet and clay soils. It is drought-tolerant.

**GROWTH RATE** Moderate

**CO2** 15,365.20 (Description: Arbor Day Foundation)

**Pistacia chinensis ‘Keith Davey’ / Chinese Pistache**

**DESCRIPTION** The Pistacia chinensis is a deciduous tree with broad, spreading growth to 35' in height. Its leaves have 10-16 leaflets, and the fall coloring arrives in beautiful shades of red, orange and yellow. Prune young trees to shape. This tree does not have edible nuts. Female trees have tiny red fruit, turning dark blue. It prefers full sun and deep, infrequent waterings. This is a great street or park tree.

**TYPE** Deciduous Tree

**HEIGHT** 35'

**WIDTH** 25-25'

**SUN** Full

**WATER** Low

**SOIL TYPE** Sandy, Clay, Loam, Rocky, Unparticular

**GROWTH RATE** Moderate (Harlow & Coate, 2004)
LARGE TREES (More than 35’ tall at maturity)

**Fraxinus angustifolia (syn. Oxycarpa) ‘Raywood’ / Raywood Ash**

*Approved Street Tree*

**DESCRIPTION**
This attractive large tree will grow quickly to 50’ high and 30’ wide, with a longevity from 50-150 years! It has deciduous, green, long and thin foliage, which turns a beautiful red or purple in fall. Flowers appear in spring but are considered inconspicuous. This tree has no fruit. Trunk is typically single, light gray and can be rough or smooth. It does best in full sun with regular watering. It tolerates desert areas and cold temps. Looks great when planted in groves. Also known as: Claret Ash. TYPE Deciduous Tree HEIGHT 40-50’ WIDTH 25-30’ SUN Full WATER Moderate, Extra in Summer SOIL TYPE Sandy loam is ideal, but tolerant of a variety of soils. Drought-tolerant. GROWTH RATE Fast CO2 5,050.10 (Description by PlantMaster)

**Photo source:** CalPoly [SelectTree](https://selecttree.com)

**Ginkgo biloba ‘Autumn Gold’ / Ginkgo or Maidenhair Tree**

*Approved Street Tree*

**DESCRIPTION**
These trees are well-known for their unique fan-shaped leaves that turn an iconic golden color in the fall. This species has continually existed on earth since the time of dinosaurs, causing some to call it a living fossil. The Ginkgo tree has lasted so long because it is exceptionally hardy and resistant to insects and diseases - traits we admire in it today. Although this tree grows slowly, it makes a great shade tree once mature. The ‘Autumn Gold’ cultivar is a male clone and does not produce fruit. TYPE Deciduous Tree HEIGHT 35-45’ WIDTH 25-35’ SUN Full, Half WATER Moderate SOIL TYPE Can grow in almost any soil. GROWTH RATE Moderate to slow CO2 4,022.60 (Description: Sacramento Tree Foundation)

**Photo from Richmond Street Trees**

**Platanus x hispanica (syn. P x acerifolia) ‘Bloodgood’ or ‘Columbia’ or ‘Yarwood’ / Sycamore** (aka London Plane Tree)

*Approved Street Tree*

**DESCRIPTION**
The London Planetree is a widely planted street tree, and for good reason. Its attributes were discovered in London where the new hybrid first appeared around 1645. The tree was found to thrive in the sooty air and provide wonderful shade. Its ability to withstand air pollution, drought and other adversities assures its popularity as an urban tree. Strong limbs also help make the London Planetree a good choice where site conditions allow for its large size. Beyond its reputation as a survivor, this tree is simply worth admiring. The unique bark and interesting branching give it amazing visual appeal — whether summer or winter. ‘Bloodgood’ is an American cultivar very resistant to plane canker. It is a fast-growing tree with a long straight trunk and a rounded crown. TYPE Deciduous Tree HEIGHT 40-80’ WIDTH 30-40’ SUN Full WATER Low, Moderate SOIL TYPE Unparticular: Acidic, Alkaline, Clay, Drought, Loamy, Moist, Sandy, Well Drained, Wet GROWTH RATE Fast (Description: Arbor Day Foundation and PlantMaster)

Note: According to trees.stanford.edu, “Along with oaks and olive, Platanus is a significant allergenic tree in our area pollinating in April–June.” Photo source: Arbor Day Foundation
Quercus suber / Cork Oak

DESCRIPTION The Cork Oak [in its natural habitat] is an evergreen with moderate growth to a height of 70'-100' and as wide. Both the trunk and main scaffold branches are covered with cork (the cork of commerce). Its leaves are 3” long, and dark green in color. TYPE Evergreen Tree HEIGHT 40-60' WIDTH 40-60' SUN Full WATER Low SOIL TYPE Sandy, Clay, Loam, Rocky, Unparticular GROWTH RATE Moderate (Harlow & Coate, 2004)

Ulmus parvifolia 'Frontier' or 'Drake' or 'Pioneer' / Chinese Elm

DESCRIPTION The 'Frontier' elm is a hardy shade tree prized for its resilience and fall color. It can tolerate poor soil and is resistant to Dutch elm disease. When young, it tends to maintain a narrow, pyramid-like shape, but once mature it often spreads out and can be as wide as it is tall. Its showy display of purple-hued red leaves in the fall stands out among canopies of red and orange. This tree is a moderate water user and is not as drought-tolerant as other species of elm, but it is a great choice for lawns and other moist environments. The Richmond Urban Greening Master Plan describes it as “ideal as a street tree.” TYPE Deciduous Tree HEIGHT 40 ft. WIDTH 30 ft. SUN Full WATER Low SOIL TYPE prefers moist, well-drained soil, but is tolerant of both drought and urban conditions GROWTH RATE Fast CO2 9,619.10 (Sacramento Tree Foundation)
Section 2: Local Natives - these are tree and arborescent shrub species that are appropriate for private property, public parks, open spaces, and riparian areas. Local native trees and shrubs are optimum for providing wildlife habitat throughout the city.

*Acer circinatum* / Vine Maple

**DESCRIPTION** Vine Maple does well in cooler climates, or in shaded locations which are relatively moist. It tolerates a wide variety of soils but prefers a fairly fertile, moist soil which is rich in humus. It is quite hardy but suffers in hot, dry conditions. A smaller alternative to Japanese Maple, as a patio or lawn specimen, but not as a shade tree per se. It usually develops multi-trunks, and makes a very attractive specimen with a low, broad, foliage canopy with an interesting habit. Good stream-side tree. **TYPE** Deciduous Tree **HEIGHT** 12-25' **WIDTH** 20' **SUN** Shade **WATER** High **SOIL TYPE** Sand, Loam **GROWTH RATE** Fast **PLANTING AREA** 5' to 10' **SUNSET ZONES** 2 - 6, 14 – 17 (Plantmaster.com, UFEI)

*Alnus rhombifolia* / California White Alder

**DESCRIPTION** White Alder is a deciduous tree with spreading or ascending branches and downward pointing tips. It has coarse teeth and dark green leaves. It is very fast growing 50'-90' tall with a 40' spread. It is very heat and wind tolerant and is a native to California. Green yellow flowers appear in spring. During winter, small cones decorate bare limbs. Also known as: Western Alder **TYPE** Deciduous Tree **HEIGHT** 50-90' **WIDTH** 40' **SUN** Sun or Shade **WATER** Medium, extra in summer **SOIL TYPE** Sand, Clay, Loam, Rocky **GROWTH RATE** Fast **PLANTING AREA** >10' **SUNSET ZONES** 1 - 10, 14 – 21 (Plantmaster.com, UFEI)

*Aesculus californica* / California Buckeye

**DESCRIPTION** The Aesculus californica is a tree that is interesting year-round. Creamy pink or white fragrant flowers bloom in the spring. When late summer arrives, these leaves drop to unveil pear-shaped fruits. It should be noted that these flowers are poisonous. Buckeye has a decorative bark and branch structure. It slowly grows to 15’ tall. It needs regular water for a few years and then will become drought tolerant. **TYPE** Deciduous Tree **HEIGHT** 12-25' **WIDTH** 12-25' **SUN** Full, Half **WATER** Very Low, Low **SOIL TYPE** Sandy, Clay, Loam, Rocky, Unparticular **GROWTH RATE** Slow (Harlow & Coate, 2004)

*Ceanothus ‘Ray Hartman’* / California Wild Lilac

**DESCRIPTION** Growing vigorously as either a large shrub or small tree, the Ray Hartman has big, round, dark green leaves and medium blue, delicate flowers in 3”-5” clusters that bloom in winter and spring. It grows to 12’ high and 8’-10’ wide. This cultivar has good tolerance for heat; it needs occasional deep watering with good drainage. It does well in coastal as well as inland valley gardens. Deer love new foliage. Plant in full to part sun; it is not fussy about soil, growing in clay as well as sandy soil. **TYPE** Evergreen Shrub **HEIGHT** 12 ft. **WIDTH** 8-10 ft. **SUN** Full, Half **WATER** Low, Extra in Summer **SOIL TYPE** Clay, Loam, Rocky, Unparticular **GROWTH RATE** Fast (Plantmaster.com)
**Cercis occidentalis / Western Redbud**

**DESCRIPTION** This deciduous shrub or small tree reaches 15' tall and 10' wide. Beautiful magenta flowers appear in spring, before the leaves appear. Foliage is apple green, turning yellow to red in the fall. Seed pods dangle on this tree in winter. Western Redbud prefers full sun but will appreciate afternoon shade in desert areas. It needs well-draining soil. It is drought tolerant once it's established. It attracts hummingbirds and butterflies. A tree of varying interest all year round! **TYPE** Deciduous Tree **HEIGHT** 12-25' **WIDTH** 6-12' **SUN** Full, Half **WATER** Very Low **SOIL TYPE** Sandy, Clay, Loam, Rocky, Unparticular **GROWTH RATE** Moderate **SUNSET ZONES** 2–24 **PLANTING AREA** 2' to 5' (Harlow & Coate, 2004)

**Garrya elliptica / Silk Tassel**

**DESCRIPTION** The shrub will reach about 10' tall and wide. It has small, leathery, dark green leaves with wavy margins and gray woolly undersides. Silvery gray flowers which look like tassels, appear in winter. It tolerates full sun except in hot inland areas; Coast Silktassel appreciates afternoon shade in these areas. It does best in well-draining, average soil. It is salt and wind tolerant. It grows in coastal areas also. **TYPE** Shrub **SEASON** Evergreen **HEIGHT** 6-12' **WIDTH** 6-12' **SUN** Full, Half **WATER** Low **SOIL TYPE** Sandy, Loam, Rocky **GROWTH RATE** Moderate (Plantmaster.com)

**Heteromeles arbutifolia / Toyon**

**DESCRIPTION** Toyon is a California native evergreen shrub that grows 8'-15'. high and spreading 8'. It has leathery, toothed, green leaves. Small, white, fragrant flowers appear in late spring or early summer, followed by clusters of red winter berries. It tolerates full sun or partial shade, heat, smog, wind and heavy or light soils. Established plants are drought tolerant. It may take several years for plant to be established; at that point, it's great for erosion control. **TYPE** Broadleaf Evergreen Tree **HEIGHT** 6-12', 12-25' **WIDTH** 6-12' **SUN** Full, Half **WATER** Very Low, Low **SOIL TYPE** Sandy, Clay, Loam, Rocky, Unparticular **GROWTH RATE** Moderate (Harlow & Coate, 2004)

**Platanus racemosa / Western Sycamore**

**DESCRIPTION** A California native riparian tree; tolerates extreme heat and wind. The California Sycamore is a fast growing, deciduous tree that reaches up to 40'-50' high. It tolerates heat, smog, and moist conditions; it is native to riparian areas. It has an interesting mottled bark when the tree is bare in winter. It needs a moderate amount of watering unless the water table is high. Leaves turn yellow in fall before dropping. Hummingbirds and butterflies love the Sycamore. **TYPE** Deciduous Tree **HEIGHT** 80' **WIDTH** 20-50' **SUN** Full, Half **WATER** High **SOIL TYPE** Sandy, Clay, Loam **GROWTH RATE** Fast (Plantmaster.com)

**Prunus ilicifolia subsp. lyonii / Catalina Cherry**

**DESCRIPTION** The Catalina cherry is an evergreen tree or shrub that grows 15'-40' high and wide. It develops showy white flowers in the spring and red fruit in the fall. It is resistant to oak root fungus. The Catalina cherry is native to California, is drought tolerant, is a beneficial insect plant, and attracts butterflies. **TYPE** Evergreen Tree **HEIGHT** 35' **WIDTH** 20-30' **SUN** Full, half **WATER** Low **SOIL TYPE** Sandy, Clay, Loam, Rocky, Unparticular **GROWTH RATE** Moderate **SUNSET ZONES** 5-9, 12-24 **PLANTING AREA** 5' to 10' (Plantmaster.com)
**Quercus agrifolia / Coast Live Oak**

DESCRIPTION The Coast Live Oak is an evergreen, round-headed tree with regal bearing. It can reach 25'-80' high and 25-40' wide and grows very well from the coastal areas to the interior valleys. Strong herculean branches adorn mature trees casting much appreciated summer shade. It attracts wildlife in droves. **TYPE Evergreen Tree**

**HEIGHT 25-40', 40-60', 60-100'**

**WIDTH 25-40'**

**SUN Full**

**WATER Very Low, Low**

**SOIL TYPE Sandy, Clay, Loam, Rocky, Unparticular**

**GROWTH RATE Moderate** (Harlow & Coate, 2004)

**Rhamnus (Frangula) californica / California Coffeeberry**

DESCRIPTION The California Coffeeberry is an evergreen shrub that reaches 6'-8' high and 10' wide. It has a rounded form that can be pruned to your liking. Foliage is large, deep green with reddish tints. Flowers are considered inconspicuous. It has red berries that turn black in late summer, which attracts birds. The berries have seeds which resemble coffee beans! This shrub tolerates sun or partial shade in all soil types. This CA native is drought tolerant once it's established. This shrub also attract butterflies and bees. **TYPE Shrub**

**SEASON Evergreen**

**HEIGHT 6-12'**

**WIDTH 6-12'**

**SUN Full, Half**

**WATER Very Low**

**SOIL TYPE Sandy, Clay, Loam, Rocky, Unparticular**

**GROWTH RATE Moderate** (Plantmaster.com)

**Sambucus mexicana / Blue Elderberry**

DESCRIPTION The Blue Elderberry is a deciduous shrub that grows 4'-10' tall or tree that reaches up to 40' high. The leaves of this plant have 5-9 leaflets with white spring flower clusters developing into blue berries. The Blue Elderberry is a native to California, is drought tolerant and is a beneficial insect plant. Takes wet conditions with good drainage. **TYPE Shrub**

**SEASON Deciduous**

**HEIGHT 40 ft.**

**WIDTH 25-30 ft.**

**SUN Full**

**WATER Low**

**SOIL TYPE Sandy, Loam, Rocky**

**GROWTH RATE Fast, Moderate** (Plantmaster.com)

**Sequoia sempervirens ‘Aptos Blue’ or ‘Soquel’ / Coast Redwood Tree**

DESCRIPTION Sequoia sempervirens 'Aptos Blue' is a strong and fast growing selection of Coast redwood with horizontal branching and pendant branchlets holding dark Blue-green foliage. After 10 years of growth, a mature specimen will measure 25 feet (8 m) or more in height and two-thirds as wide, an annual growth rate of 2.5 feet (75 cm) or more. Needs ample water. Resistant to oak root fungus. Tree has nearly horizontal branches with branchlets hanging down. **TYPE Conical Evergreen Tree**

**HEIGHT 100’ WIDTH 15-30 ft.**

**SUN Full, Half**

**WATER Medium**

**SOIL TYPE**

**Soil texture: Loam or Sand or Clay; Soil pH: Very Acidic to Slightly Alkaline**

**GROWTH RATE Fast**

**CO2 9,619.10**

(Description: American Conifer Society and UFEI CalPoly SelecTree)

**Umbellularia californica / California Bay Laurel**

DESCRIPTION The California Bay Laurel is an evergreen tree, usually associated with sycamores and oaks in shaded riparian habitats and oak woodlands, and with other trees in mixed-evergreen forests. Bay trees bear yellowish-green flowers in umbrella-shaped clusters from December to April, which are followed by olive-sized fruits that turn purple when ripe. The fine-grained, honey-colored wood is used in furniture, bowl turning, and carving. The dark green, pungent-smelling leaves can be used as flavoring and as an insect repellent, and a tea from these leaves has been used to treat rheumatism, stomach problems, and headaches. **TYPE Rounded Evergreen Tree**

**HEIGHT 75’ WIDTH 60’**

**SUN Full, Sun or Shade**

**WATER Medium**

**SOIL TYPE**

**Loam or Sand or Clay; Soil pH: Very Acidic to Slightly Alkaline**

**GROWTH RATE Medium** (Description: UFEI CalPoly SelecTree)
Section 4: Select Species for Air Quality and Carbon Sequestration per Resilient by Design Final Report; ouR-HOME illustrates a suite of sea level rise adaptations and multi-benefit urban greening projects for North Richmond including Neighborhood Greenways, Air Quality Parks, and Tree Nodes.

**Neighborhood Greenway**: Capitalize on space along wide rights of way such as the Richmond Parkway. Tree species selections are based on high effectiveness at removal of fine particulate matter from large number of diesel truck trips. Focus on large evergreen trees with long life spans that do not emit high levels of volatile organic compounds—for example cypress, pines and possibly poplars.

**Air Quality Park**: Vacant lots can be transformed into densely planted parks that improve air quality and provide new social spaces. Trees are planted in clusters with varying species for ecological diversity and to maximize air quality benefits. Potential species suites include native oaks, willows and sycamores.

**Tree Nodes**: Preserve large, healthy tree canopy by protecting existing trees with an appropriate buffer zone. Plant new trees outside the protective buffer for future successional canopy and habitat connectivity. The tree nodes are created in tandem with new housing proposals on neighborhood vacant lots.

**Salix lasiolepis / Arroyo Willow**

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<thead>
<tr>
<th>DESCRIPTION</th>
<th>Air + Water Quality Filter Zones</th>
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<tr>
<td>Weeping branches display striking pink stems and buds, surrounded by foliage mottled with white, green and pink highlights. The brightly colored stems provide excellent winter interest. This graceful shrub is a delightful garden accent. Easily maintained at a smaller size with regular pruning. (Calscape).</td>
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<td><strong>TYPE</strong></td>
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<td><strong>HEIGHT</strong></td>
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<td><strong>SOIL TYPE</strong></td>
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<td><strong>GROWTH RATE</strong></td>
<td>Fast (SelectTree)</td>
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**Cupressus macrocarpa / Monterey Cypress**

**DESCRIPTION** Standing 40’ tall and wide, bright green foliage highlights this tree. Ideal for planting on golf courses or near the coast, the Monterey Cypress spreads with age to shed its narrow and pyramidal structure of youth. The wind will shape the tree. It grows best in coastal habitats where it is not exposed to extreme heat or humidity. It does best in full sun with acidic, sandy, loam, clay soil that is well draining. It is drought tolerant once it's established. Also known as *Hesperocyparis macrocarpa*. (Jerry Sortomme Editor, PlantMaster)

**TYPE** Evergreen Tree

**HEIGHT** 40-65’

**SUN** Part to Full

**WATER** Very Low, Low

**SOIL TYPE** Sandy, Clay, Loam, Rocky, Unparticular

**GROWTH RATE** Fast (SelecTree)

**CONSIDERATIONS** Branch strength: Strong. Root damage potential: Moderate. Potential health issues: No known hazards. Biogenic emissions: Low. Wildlife interactions: Tree is deer resistant and attracts birds. Disease and pest susceptibility: Armillaria, Phytophthora, Root Rot and Beetle Borers. Powerline friendly: No. Potential invasiveness: This plant is classified as invasive by the California Invasive Plant Council (Cal-IPC) states this tree, native to the Monterey area, will invade coastal prairie, desert scrub and riparian areas.

**Quercus lobata / Valley Oak or California White Oak**

**DESCRIPTION** The Valley Oak is a large deciduous tree that can quickly reach 20' tall in 5 years, then another 20' tall in the subsequent 5 years. Then this majestic California native slows down in growth, becoming more vase-like in habit, until reaching 60' tall in 20 years. Leaves are deeply lobed and gray green, fuzzy, with underneath a pale green. Leaves turn yellow, then orange, then brown during the fall. Flowers appear in spring but are considered insignificant, followed by acorn fruit. Young trees have a pewter colored trunk, changing to dark gray with fissures and branches that are drooping. This tree does best in areas with a high water table. It attracts squirrels and birds. It does tolerate fires. It can reach 600 years old if roots have access to water table. (PlantMaster)

**TYPE** Deciduous Tree

**HEIGHT** 70'

**WIDTH** 50'

**SUN** Part to Full

**WATER** Medium

**SOIL TYPE** Sandy, Loam

**GROWTH RATE** Moderate (SelecTree)


**Quercus agrifolia / Coast Live Oak**

**DESCRIPTION** The Coast Live Oak is an evergreen, round-headed tree with regal bearing. It can reach 25'-80' high and 25-40' wide and grows very well from the coastal areas to the interior valleys. Strong herculean branches adorn mature trees casting much appreciated summer shade. It attracts wildlife in droves. (Jerry Sortomme Editor, PlantMaster)

**TYPE** Evergreen Tree

**HEIGHT** 25-40', 40-60', 60-100' Width 25-40'

**SUN** Full

**WATER** Very Low, Low

**SOIL TYPE** Sandy, Clay, Loam, Rocky, Unparticular

**GROWTH RATE** Moderate (Harlow & Coate, 2004)

TREE PLANTING DETAIL - TREES ON PRIVATE PROPERTY

CENTRAL LEADER TO BE INTACT.

LODGEPOLE PINE STAKES, SIZE AS SPECIFIED. SET UPWIND, TRIM TOP OF STAKE AS REQUIRED.

24" MIN. LONG V.I.T. CINCH TREE TIE OR APPROVED EQUAL TWIST IN FIGURE 8 PATTERN, NAIL AT BACK OF STAKE WITH 1" GALV. ROOFING NAIL.

SET ROOTCROWN 2" HIGHER THAN FINISH GRADE.

3" LAYER OF MULCH, KEEP 4" AWAY FROM ROOT CROWN

3" HIGH BERM AT EDGE OF CONTAINER

NATIVE SOIL OR AMENDED SOIL PER SOILS REPORT.

FERTILIZER TABLETS: 3" BELOW SURFACE, ADJACENT TO ROOTBALL. SEE SPEC.S FOR QUANTITY.

EXCAVATE, LOOSEN BOTTOM OF HOLE, REPLACE EXISTING SOIL & FOOT TAMP. NO BACKFILL MIX UNDER ROOTBALL. SHOVEL CUT SIDES OF PLANT PIT 36 CUBIC YARDS MINIMUM AREA.

TREE PLANTING AND STAKING DETAIL (CITY OF RICHMOND)

1" x 9' single metal stake with metal arm bar secured to stake and rubber strap around trunk.

Prevailing wind.

Remove nursery stake. If central leader needs to be straightened or held erect, it is acceptable to attach a ½" x 8' bamboo pole to the central leader and trunk.

Height of arm bar shall vary per tree. Contractor to adjust as needed to hold tree erect.

1" x 9' single metal stake. Install per manufacturer's specifications and recommendations. Stake location shall not interfere with branches.

TREE STAKING DETAIL - SINGLE METAL STAKE (URBAN TREE FOUNDATION)
TREE PLANTING DETAIL - TREES IN THE PUBLIC RIGHT OF WAY

PREVAILING WIND
PLAN A-A'

24" CORDED BLACK RUBBER TREE TIE, LOOP @ TRUNK & NAIL TO STAKE. ALTERNATE: #9 GAUGE GALVANIZED WIRE TOE WIRE ENFORCED RUBBER HOSE GUARD.

3" X 10' PRESSURE TREATED LODGEPOLE PINE STAKE. PLACE OUTSIDE ROOTBALL. STAKES TO BE PLUMB. STAKES TO BE NO CLOSER THAN 4" OR FARTHER THAN 16" FROM TRUNK.

SIDEWALK

2' MIN.

4" PERF. PIPE WITH BUBBLER FOR WATERING, 2 PER TREE.

2' MIN.

CURB

BERM FOR WATERING BASIN. REMOVE IN LAWN AREAS AFTER INITIAL WATERING.

2" LAYER CEDAR BARK MULCH, 1" FL. KEEP MULCH 6" CLEAR OF TRUNK.

AMENDED SOIL MIX, PER SPECIFICATIONS AND SOIL REPORT RECOMMENDATIONS.

SLOW RELEASE FERTILIZER TABLETS, 20N-13P-5K. QUANTITY PER MANUFACTURER'S DIRECTIONS.

UNDISTURBED NATIVE SOIL.

NOTES:

1. ROOT CONTROL BARRIER MUST BE USED IF TREE IS PLANTED WITHIN 5' OF CURB, SIDEWALK, OTHER PAVING, OR BUILDING. SEE ROOT BARRIER DETAIL.

2. TREES MUST HAVE AN UNCUT LEADER & HAVE A UNIFORM TAPER FROM BASE TO TIP. TREES MUST MEET AT LEAST NORMAL CALIPER & HEIGHT FOR CONTAINER SIZE. OVERGROWN TREES ARE NOT ACCEPTABLE.

3. ROOT BALL: TREES SHALL NOT BE ROOT BOUND. SCARIFY ROOT BALL BEFORE PLANTING. PLANT WITH CROWN 1' ABOVE EXISTING GRADE TO ALLOW FOR SETTLEMENT.

4. PLANT PIT SIZE SHALL BE 24" WIDER THAN CAN OR ROOT BALL, OR TWICE THE WIDTH, WHICHEVER IS GREATER, WITH DEPTH AS SHOWN. SCARIFY SIDES OF PIT.

TREE PLANTING & STAKING

Approved by: [Signature]

Date: December 1, 2014

Scale: N.T.S.

Drawing:
TREE PLANTING EVENT TOOLKIT

Developed in partnership with the US Forest Service and CALFIRE, the following Tree Planting Event Toolkit¹ and links to resources is reformatted from the California ReLeaf website (https://californiareleaf.org/resources/event-planning-toolkit/).

STEP 1: PLAN YOUR EVENT 6-8 MONTHS PRIOR

GATHER A PLANNING COMMITTEE

- If funding is already secured, check the goals of the grant to align the grant activities and budget.
- Otherwise, identify goals for the tree planting event, identify financial needs and fundraising possibilities. Develop a plan and start fundraising right away.
- Identify tree planting volunteer jobs and committee roles and responsibilities and write them out
- Identify a Project Manager and/or tree planting event chair and define roles and responsibilities.

SITE SELECTION AND PROJECT APPROVAL

- Upon completion of the tree inventory to identify existing trees and tree planting opportunity sites
- Determine potential Adopt-A-Tree tree planting site(s)
- Contact residents to see if they agree to accept and care for a tree, based on the Adopt-A-Tree Agreement
- Assess the site for tree planting with the property owner. Determine the physical restrictions of the site, such as:
  - Tree size and height considerations
  - Roots and pavement
  - Energy savings
  - Overhead restrictions (power lines, building elements, etc.)
  - Danger below (pipes, wires, other utility restrictions) – Contact 811 at https://call811.com/Start-Here/Homeowners before you dig to request the approximate locations of buried utilities to be marked with paint or flags.
  - Available sunlight
  - Shade and nearby trees
  - Soil and drainage
  - Compacted soils
  - Irrigation source and accessibility
  - Property owner related concerns
- Determine if the resident wishes to plant on private property or the public right of way (between the sidewalk and the street).
  - Trees in the right of way will require an encroachment permit from the County and possibly approval/permission from site property owner. The Watershed Project staff will bundle applications in groups for permitting.
  - Trees on private property do not require approval by the County
- Plan to Prepare the Site
  - Clear turf where each tree will be planted (up to 1 ½ times the width of the tree pot)
  - A weed-free zone will prevent trees from being out-competed and reduces the possibility of small rodents causing damage to the seedling
  - If there is compacted soil, determine if you want to dig the holes before the planting date
  - If there is compacted soil, amending the soil might be necessary. Soils can be amended with compost to improve quality

TREE SELECTION AND PURCHASING

- TWP has developed a list of recommended trees, including trees approved by Contra Costa County for planting in the public right of way (between the sidewalk and the street).
- Research appropriate tree type for the site after completing the site assessment.
- The following resources might be helpful to you in this process:
  - SelecTree² (https://selectree.calpoly.edu/) – This program designed by the Urban Forestry Ecosystems Institute at Cal Poly is a tree selection database for California. You can find the best tree to plant by attribute or by zip code.
- Make final tree selection decision with site owner involvement and sign off
- Visit your local nursery to order seedlings and facilitate the purchasing of trees
- Carefully select trees in person to inspect the quality and health of all nursery stock

TREE PLANTING EVENT DATE AND DETAILS

- Determine tree planting event date and details
- Determine tree planting event program, i.e., Welcome Message, Sponsor and Partner Recognition, Ceremony (recommended duration of 15 minutes), volunteer check-in process, educational component (if applicable), tree planting organization, team leads, the number of volunteers needed, set up, clean up, etc.
- Identify participants, entertainment, speakers, local elected officials, etc., that you want present at the event and request that they put the date on their calendars

POST PLANTING TREE CARE PLAN

- Develop a post planting Tree Care Plan with Resident Involvement
  - Tree Watering Plan – Weekly
  - Develop a Weeding and Mulching Plan – Monthly
  - Develop a Young Tree Protection Plan (to protect seedlings using mesh or plastic tubing)- Post Planting
  - Develop a Pruning and Tree Health Monitoring Plan – Yearly during the first three years
- For tree care planning tips please watch our ReLeaf educational webinar: Tree Care Through Establishment – with guest speaker Doug Wildman

PLANTING SUPPLY LIST

- Develop a planting supply list, here are some items to consider:
  - Hoe (1-2 per team)
  - Round head shovels (3 per team for 15 gallon and up trees, 2 per team for 5 gallon and smaller trees)
  - Burlap or flexible fabric to capture and lift backfilled soil (1 to 2 per team)
  - Hand trowels (1 per team)
  - Gloves (pair for each person)
  - Scissors to remove tags
  - Utility knife to cut away container (if needed)
  - Wood chip mulch (1 bag per small tree, 1 bag = 2 cubic feet) – Mulch can typically be donat-

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ed and delivered by a local tree care company, a school district, or a parks district for free with advanced notice.

- Wheelbarrows/pitchforks for mulch
- Water source, hose, hose bib, or buckets/carts for trees
- Wooden stakes and or tree shelter tubes with ties
- Hammer, post pounder, or mallet (if needed)
- PPE: Helmets, eye protection, etc.
- Traffic cones (if needed)

- If the site has compacted soil, consider the following
  - Pick Axe
  - Digging bar
  - Auger (Must be pre-approved via 811 permission)

### VOLUNTEER PLANNING

- Determine if you will use volunteers to plant trees
- Determine if you will use volunteers to care for the trees for the first three years and long-term, including watering, mulching, stake removal, pruning and weeding
- How will you recruit volunteers?
  - Social media, phone calls, emails, flyers, neighborhood listservs, and partner organizations (Volunteer Recruitment Tips)
  - Consider that some nonprofits might have the staff or a team ready to go. Some companies or municipalities will organize corporate work days or leverage their existing networks and contribute financially to your event
  - Determine type of volunteer roles needed i.e.- event set up, tree planting leaders/mentors, volunteer management like check-in/check out and liability waiver confirmation, event photography, tree planters, post event clean-up.
  - Create a volunteer communication and management plan, how will you have volunteers sign-up or RSVP in advance, how will you confirm and remind the volunteer of the planting event or tree care duties etc., how will communicate safety and other reminders (consider creating a website form, google form, or using online registration software like eventbrite, or signup.com)
  - Develop a plan for volunteer safety, ADA compliance comfort needs, policy/waivers, restroom availability, education about tree planting and the benefits of trees, and the who, what, where, when why of your event
  - Acquire a Volunteer Liability Waiver and determine if your organization or planting site/partner might have volunteer liability policies or requirements, forms, or liability waivers required. Please see our Sample Volunteer Waiver and Photo Release (.docx download)

- Plan for the safety and comfort needs of volunteers and plan on having the following at the event:
  - First Aid Kit with gauze, tweezers, and bandages
  - Sunscreen
  - Hand wipes
  - Drinking water (Encourage volunteers to bring their own refillable water bottles)
  - Snacks (Consider asking a local business for a donation)
  - Clipboard sign in sheet with a pen
  - Extra Volunteer Liability Waivers for drop-in volunteers
  - Camera to take photos of volunteers working
  - Restroom accessibility
STEP 2: RECRUIT AND ENGAGE VOLUNTEERS AND COMMUNITY

EVENT COMMITTEE TO DOS (6 WEEKS PRIOR)

- Assign specific tasks to committee members to help spread the workload
- Confirm the tree order and delivery date with the tree nursery
- Confirm tree planting supplies availability
- Call and check with the site owner and 811 to make sure the site is safe for planting (visit https://call811.com/Start-Here/Homeowners)
- Continue with fundraising – seek sponsors
- Put together a team of experienced tree planting volunteers who can mentor planting teams on the day of the event

PLAN MEDIA CAMPAIGN (6 weeks prior)

- Create media (videos/images), a flyer, poster, banner, or other promotional materials about the event to use on social media or community bulletin boards, etc.
- Consider using Canva for Nonprofits: Discover the easy way to create high-impact social media graphics and marketing materials. Nonprofit can get Canva’s premium features for free.
- Identify social media influencers, community groups etc. and tell them about your event and try to get them involved
- Finalize the program details for your tree planting ceremony with your local partners including whether you may want or have access to use a stage, podium, or PA system.
- Recruit volunteers using local news outlets, partners, email lists, and social media

EVENT COMMITTEE TO DOS (2-3 weeks prior)

- Schedule a committee chair meeting to make sure every committee has successfully completed assigned tasks
- Gather supplies for the volunteer’s tools for planting and comfort needs listed above. Check with your local library or parks department to borrow tools
- Send confirmation emails/phone calls/text messages with event logistics, safety reminders of what to wear and bring to volunteers, partners, sponsors etc.
- Re-confirm the tree order and delivery date with the tree nursery, and share contact information between on-site contact and the nursery delivery team
- Confirm that 811 has cleared the site for planting (visit https://call811.com/)
- Schedule the pre-planting preparation of the site i.e. weeding/soil amending / pre-digging (if needed) etc.
- Confirm and brief the tree planting lead volunteers who will be training and working with volunteers during the event

LAUNCH MEDIA CAMPAIGN (2-3 weeks prior)

- Launch media campaign and publicize the event. Prepare media advisory/press release for local media and reach out to community social media groups through Facebook, Instagram, Twitter etc.
- Distribute flyers, posters, banners, etc.
- Identify news outlets in your area (newspapers, news channels, YouTube channels, freelancers, radio stations) and obtain an interview with them to discuss your event
STEP 3: HOLD YOUR EVENT AND PLANT YOUR TREES

EVENT SET UP – Recommended 1-2 Hours Before Your Event

- Lay out tools and supplies
- Stage trees at their planting sites
- Use traffic cones or caution tape to create a protective barrier between traffic and volunteers
- Set up a water, coffee, and snack (allergy friendly) station for volunteers
- Stage ceremony/event gathering area. If available, set up and test the PA system/portable speaker with music
- Verify the restrooms are unlocked and stocked with necessities

VOLUNTEER CHECK-IN – 15 Minutes Prior

- Greet and welcome volunteers
- Have volunteers sign in and sign out to track volunteer hours
- Have volunteers sign a liability and photography waiver
- Check age or safety requirements i.e. closed-toed shoes etc.
- Direct volunteers to the location of restrooms, hospitality table with water/snacks, and group gathering location for the ceremony or where volunteer orientation will occur prior to the start of tree planting

CEREMONY AND EVENT

- Begin the Ceremony/Event Program (We recommend keeping the welcome message to about 15 minutes)
- Bring your speakers to the front of the event area
- Engage participants and volunteers and ask them to gather around for the start of the ceremony
- Thank everyone for joining
- Let them know how their actions in planting trees will benefit the environment, wildlife, community etc.
- Acknowledge grant funders, sponsors, key partners etc.
  - Provide the sponsor a chance to speak (duration recommendation 2 minutes)
  - Provide site owner a chance to speak (duration 2 minutes)
  - Provide the local elected official a chance to speak (duration recommendation 3 minutes)
  - Provide the Event Chair a chance to speak about event logistics and happenings, including hospitality/orientation needs, such as the restrooms, water etc. (duration recommendation 3 minutes)
  - Demonstrate how to plant a tree using your tree planting leaders – try not to have more than 15 people per tree planting demonstration and keep it brief
- Break volunteers into groups and send them to the planting sites with tree planting leaders
- Have tree planting leaders provide a tool safety demonstration
- Have tree planting leaders have the volunteers introduce themselves by stating their names and do a group stretch together before planting, consider having the group name their tree
- Designate 1-2 tree planting leaders to inspect each tree after planting to do a quality control check for tree depth and stake length, and mulching
- Designate someone to take photos of the event and gather quotes from volunteers and partners about why they are volunteering, what it means to them, what they are doing etc.
- When tree planting and mulching is complete, gather the volunteers back together to have a snack/water break.
- Invite volunteers to share their favorite part of the day and use the time to thank the volunteers and share or announce upcoming events or how they can stay connected i.e. social media, website, email etc.
- Remind volunteers to sign out to track volunteer hours
- Clean up site ensuring all equipment, trash, and other items have been removed
STEP 4: AFTER THE EVENT FOLLOW UP AND TREE CARE PLAN

AFTER THE EVENT – FOLLOW UP

- Wash and return any borrowed tools
- Show appreciation to your volunteers by sending thank you notes and or emails and invite them to join you in tree care events such as mulching, watering, and caring for the planted trees.
- Share your story via social media posts tagging grant funders, sponsors, key partners, etc.
- Write a Press Release about the event that includes information on the event and organizers, statistics compiled throughout the day, interesting quotes from organizers or volunteers, pictures with captions, and video clips if you have them. After compiling all the materials for your press release, send it to media outlets, influencers, and organizations like your grant funders or sponsors.

CARE FOR YOUR TREES

- Initiate your watering plan – weekly
- Initiate your weeding and mulching plan – monthly
- Initiate your tree protection plan – post planting
- Initiate your pruning plan – after the second or third year after planting
Tree Quality Cue Card

Shade trees that grow to be large should have one relatively straight central leader. Heading the tree is acceptable provided the central leader is retrained.

Desirable  |  Desirable  |  Not desirable
---|---|---

Main branches should be well distributed along the central leader, not clustered together. They should form a balanced crown appropriate for the cultivar or species.

Desirable  |  Not desirable
---|---

The diameter of branches that grow from the central leader, or trunk, should be no larger than two-thirds (one-half is preferred) the diameter of the trunk measured just above the branch.

Desirable  |  Not desirable
---|---

The largest branches should be free of bark that extends into the branch union, known as included bark (see A and B).

Desirable  |  Not desirable
---|---

Temporary branches particularly on trees less than 1 inch caliper should be present along the lower trunk below the lowest main branch. These branches should be no larger than 3/8 inch in diameter.

Desirable  |  Not desirable
---|---

The trunk should be free of wounds, sunburned areas, conks (fungal fruiting bodies), wood cracks, bleeding areas, signs of boring insects, cankers, or lesions. Properly made recent pruning cuts are acceptable.

Desirable  |  Not desirable
---|---

The trunk caliper (thickness) and taper should be sufficient so that the tree remains vertical without a stake.

Desirable  |  Not desirable
---|---

The root collar (the uppermost roots) should be within the upper 2 inches of the soil media (substrate). The root collar and the inside portion of the root ball should be free of defects, including circling, kinked, and stem girdling roots. You may need to remove soil near the root collar to inspect for root defects.

Not desirable  |  Desirable
---|---

The tree should be well rooted in the soil media. Roots should be uniformly distributed throughout the container. The tree's structure and growth should be appropriate for the species or cultivar. When the container is removed, the root ball should remain intact. When the trunk is lifted, both the trunk and root system should move as one.

Not desirable  |  Desirable
---|---

The root ball should be moist throughout at the time of inspection and delivery. The roots should show no signs of excess soil moisture as indicated by poor root growth, root discoloration, distortion, death, or foul odor. The crown should show no signs of moisture stress as indicated by wilted, shriveled, or dead leaves or branch dieback.

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Tarjeta de Calidad del Árbol

Árboles de sombra que crecen grandes deben tener un líder central relativamente recto. Cortar la punta del árbol es aceptable siempre y cuando el líder central se mantenga.

Deseable  Deseable  No Deseable

Las ramas principales deben estar bien distribuidas a lo largo del líder central, no agrupadas. Estas deben formar una corona equilibrada adecuada para la variedad o especie.

Deseable  No Deseable

El diámetro de las ramas que crecen desde el líder central, o tronco, no deben ser mas grandes que dos terceras partes (preferible la mitad) del diámetro de el tronco medido justo por encima de la rama.

Deseable  No Deseable

Las ramas más grandes deben de estar libres de corteza que se extienda hasta la unión de la rama, conocido como corteza incluida (vea A y B)

Deseable  No Deseable

Ramas temporales sobre todo en árboles que tienen menos de 1 pulgada de calibre deben estar presentes a lo largo del tronco inferior, debajo de la última rama principal. Estas ramas no deben estar mas grandes que 3/8 de pulgada de diámetro.

Deseable  No Deseable

El tronco debe estar libre de heridas, áreas con quemaduras de sol, hongos (cuerpos fructíferos de hongos), aberturas de la madera, áreas de sangrado, signos de insectos perforadores, enfermedades o lesiones. Recientes cortadas de poda bien hecha son aceptables.

El calibre del tronco (grosura) y la parte gruesa de abajo del tronco debe ser suficiente para que el árbol se mantenga recto sin una estaca.

Deseable  No Deseable

El cuello de la raíz (las raíces de arriba) debe estar entre la superficie del suelo y 2 pulgadas debajo de la superficie del suelo (tierra). El cuello de la raíz y la parte interior de la bola de la raíz debe estar libre de defectos, incluyendo, raíces enredadas, retorcidas y raíces enredadas en los tallos. Tal vez necesite quitar tierra cerca del cuello de la raíz para inspeccionar los defectos de la raíz.

Deseable  No Deseable

El cuello de la raíz (las raíces de arriba) debe estar entre la superficie del suelo y 2 pulgadas debajo de la superficie del suelo (tierra). El cuello de la raíz y la parte interior de la bola de la raíz debe estar libre de defectos, incluyendo, raíces enredadas, retorcidas y raíces enredadas en los tallos. Tal vez necesite quitar tierra cerca del cuello de la raíz para inspeccionar los defectos de la raíz.

Deseable  No Deseable

El árbol debe estar bien arraigado en el suelo. Las raíces deben estar uniformemente distribuidas en el bote. La estructura y crecimiento del árbol debe ser apropiado para la variedad o especie. Cuando el bote es removido, la bola de la raíz debe permanecer intacta. Cuando el tronco es levantado, tanto el tronco y el sistema de la raíz deben moverse como uno solo.

Deseable  No Deseable

La bola de la raíz debe estar húmeda en el momento de la inspección y de la entrega. Las raíces no deben mostrar signos de exceso de humedad en la tierra según lo indica un mal crecimiento de raíz, decoloración de la raíz, distorsión, muerte o mal olor. La corona no debe mostrar signos de estrés por humedad indicados por hojas marchitas, arrugadas o muertas y por ramas secas.

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**Tree Planting Cue Card**

**Selecting quality trees:** Planting quality trees begins by choosing vigorous, structurally sound trees from the nursery. Strong trees have straight roots, a thick trunk with taper, and a good branch structure appropriate for the species (Fig. 1). The root collar (the uppermost roots) should be in the top 2 inches of the root ball.

**Digging the hole:** A firm, flat-bottomed hole will prevent trees from sinking. Dig the hole only deep enough to position the root collar even with the landscape soil surface (Fig. 2). Use a rototiller or shovel to loosen soil in an area three times the size of the root ball. This loose soil promotes rapid root growth and quick establishment.

**Installing the tree:** Remove soil and roots from the top of the root ball to expose the root collar; cut away any roots that grow over the collar (Fig. 3). Also cut any roots that circle or mat along the sides and bottom of the root ball (Fig. 4). The root collar should be even with the landscape soil after planting (see Fig. 3). Backfill with soil removed from the hole. Minimize air pockets by packing gently and applying water. Build a berm 4 inches tall around the rootball to help force water through the root ball. Enlarge the berm as the tree establishes.

**Staking:** Staking holds trees erect and allows the root ball to anchor. Secure the trunk at the point where the tree stands straight. A second stake tied directly to the trunk made of bamboo may be required to straighten the upper trunk.

**Mulching:** A layer of organic mulch, such as leaf litter, shredded bark, or wood chips, helps protect tree roots from temperature extremes and conserves soil moisture. Mulch also helps prevent grass from competing with the tree for water and nutrients. The mulched area makes it easier to operate mowers and weed eaters without hitting the trunk and compacting soil. Apply mulch to a depth of 3 to 4 inches (slightly thinner on top of the root ball).

**Irrigating:** Consistent irrigation is critical for establishment.
1. Apply about 3 gallons irrigation per inch of trunk diameter to the root ball 2 or 3 times a week for the first growing season.
2. Increase volume and decrease frequency as the tree becomes established.
3. Weekly irrigation the second year and bimonthly irrigation the third year should be sufficient for establishment.
4. Once established irrigation requirements depend on species, climate and soil conditions.
5. Irrigation devices should be regularly checked for breaks and leaks.

**Pruning:** Training young trees promotes structurally sound growth and overall tree health. Cut back or remove codominant stems (stems that compete with the central leader) to encourage growth in the central leader (below).
Tarjeta para la Plantación de Árboles

Seleccionando árboles de calidad: La plantación de árboles de calidad comienza al elegir árboles vigorosos, y estructuralmente sanos del vivero. Los árboles fuertes tienen raíces rectas, un tronco con la parte de abajo más gruesa que la parte de arriba, y una buena estructura de ramas apropiadas para la especie (Fig. 1). El cuello de la raíz (las raíces de arriba) debe de estar en la parte superior a 2 pulgadas de la bola de la raíz.

Cavando el hoyo: Un hoyo firme, con fondo plano evitara que los árboles se hundan. Cave el agujero solo lo suficientemente profundo para posicionar el cuello de la raíz al mismo nivel que la superficie del suelo (Fig. 2). Use una cultivadora motorizada (rototiller) o una pala para preparar el suelo en una área 3 veces más grande que el tamaño de la bola de la raíz. Esta tierra suelta promueve un crecimiento de raíz y establecimiento rápido.

Instalación del Árbol: Quite la tierra y las raíces en la parte superior del cuello de la raíz (A). Y coloque el cuello de la raíz al mismo nivel que la superficie del suelo (Fig. 3). También corte cualquier raíz que crece en las orillas o en la parte inferior de la bola de la raíz (Fig. 4). El cuello de la raíz debe estar al mismo nivel que la superficie del suelo después de la plantación (vea Fig. 3). Rellene con la tierra removida del hoyo. Reduzca al mínimo las bolsas de aire aplastando la tierra del hoyo cuidadosamente y aplicando agua. Construya un borde de tierra de 4 pulgadas de alto al rededor de la bola de la raíz para ayudar a forzar el agua en la bola de la raíz. Haga más grande el borde conforme el árbol se establece.

Estacando: Las estacas mantienen a los árboles rectos y permiten que la bola de la raíz se afirme. Asegure el tronco en el punto donde el árbol esta recto. Una segunda estaca de bambú amarrada directamente al tronco puede ser necesaria para enderezar la parte superior del tronco.

Cubriendo: Una capa de producto orgánico como hojas, aserrín, o astillas de madera ayuda a proteger las raíces del árbol de temperaturas extremas y conserva la humedad del suelo. El producto también ayuda a prevenir que la hierba compita con el árbol por agua y nutrientes. El área cubierta hace que sea más fácil operar cortacéspedes y corta hierba sin golpear el tronco o el suelo compactado. Aplique la capa a una profundidad de 3 a 4 pulgadas (mas poco en la parte superior de la bola de la raíz).

Riego: El riego constante es crítico para el establecimiento del árbol.
1. Aplique alrededor de 3 galones de agua por cada pulgada del diámetro del tronco a la bola de la raíz de 2 a 3 veces por semana durante el primer período de crecimiento.
2. Aumente el volumen y disminuya la frecuencia a medida que el árbol se establece.
3. El riego semanal durante el segundo año y el riego cada dos semanas durante el tercer año debe ser suficiente para el establecimiento.
4. Una vez establecido el árbol, las necesidades de riego dependerán de la especie, el clima y las condiciones del suelo.
5. Las herramientas de riego deben ser inspeccionadas regularmente por roturas y fugas.

Poda: El entrenar árboles jóvenes promueve un crecimiento estructuralmente sólido y salud de los árboles en general. Reduzca o elimine los tallos co-dominantes (tallos que compiten con el líder central) para estimular el crecimiento del líder central (abajo).

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Traducido por Vivian Neria
Root Management Cue Card

Consistent root management in the nursery promotes structurally stable and healthy trees in the landscape. Improperly managed root balls can form permanent defects, such as circles and bends on the periphery. Follow these guidelines for managing roots to reduce defects on young trees.

The root ball should be inspected at each shift to a larger container starting with the liner (the young tree in its original container, Fig. 1A). Root pruning on the periphery and bottom of liner root ball removes most defects (Fig. 1B).

Cut a root back to the point just behind the bend (Fig. 2A) to remove the bend. Cutting the root at a point after the bend (Fig. 2B) is less effective because the bend remains. Roots that grow down and around the sides of the liner root ball become woody as they enlarge in diameter (Fig. 3, right). These woody roots retain their original deflected orientation, which can cause health and stability problems for the tree.

Pruning a tree’s roots when shifting it to a larger container or before planting it in the landscape improves the root system because it cuts roots back to straight, radial root segments attached to the trunk (Fig. 4). A pruned root ball will be smaller than it was before pruning. Certain types of containers reduce root growth on the periphery of the root ball, so less root pruning may be needed. In some instances, root defects develop further inside the root ball. In these cases, prune root balls deep enough to remove defects.

In the weeks and months following root pruning, new roots grow away from the cut ends in a fanlike manner (Fig. 5). These new roots provide greater stability and should not girdle the tree.

Whether root defects can be corrected depends on their location in the root ball, severity, tree species, water management, size of roots, and time of year. It is easier to cut defective roots when a tree is younger than when it is older (Fig. 6). Ideally, roots should be inspected and defective roots pruned at each shift to a larger container, reducing the need to heavily prune larger roots.

Figure 1A. Roots growing on the periphery of the liner.

Figure 1B. Pruning the liner to remove roots growing on the periphery.

Figure 2. Cut roots at (A) to form new roots that grow away from the trunk (see Fig. 5). Do not cut roots at (B), since the defects can regrow.

Figure 3. A quality root system develops if the roots of liners (see Fig. 1) are properly pruned when the tree is shifted to a larger container (left). A poor root system develops when deformed roots are not pruned during shifting (right).

Figure 4. Pruning the roots on the periphery of a container root ball.

Figure 5. Roots growing from a cut root.

Figure 6. The liner, 5-gallon, and 15-gallon containers left an imprint on this root system. These root defects would be difficult to correct at this stage.

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**Tarjeta para el Cuidado de las Raíces**

El cuidado constante de las raíces en el vivero promueve árboles estructuralmente estables y sanos para la jardinería. El cuidado inapropiado de las raíces puede formar defectos permanentes como círculos y dobleces en la periferia. Siga estos pasos sobre el cuidado de las raíces para reducir defectos en los árboles jóvenes.

La bola de la raíz debe ser inspeccionada cada vez que sea trasplantada a un bote más grande comenzando con el liner (el árbol joven en su contenedor original, Fig. 1A). Se poda la raíz sobre la periferia y en el fondo o la parte de debajo de la bola de la raíz, esto elimina la mayoría de los defectos. (Fig. 1B)

Corte las raíces en el punto detrás de la curva (Fig. 2A) para remover la curva. Si corta la raíz en un punto después de la curva (Fig. 2B) es menos eficaz por que la curva se mantiene. Las raíces que crecen hacia abajo y alrededor de los lados del liner se vuelven leñosas cuando crecen en diámetro (Fig. 3, derecha). Estas raíces leñosas conservan su orientación original desviada, la cual puede causar problemas de salud y estabilidad para el árbol.

Figura 1A: Raíces que crecen en el periférico del contenedor pequeño.

Figura 1B. Cortando el liner para remover las raíces que crecen en la periferia.

Figura 2. Corte las raíces como se muestra en el punto (A) para formar nuevas raíces que crecen lejos del tronco (vea Fig. 5). No corte las raíces como se muestra en el punto (B), ya que los defectos pueden volver a crecer.

Figura 3. Un sistema de raíces de calidad se desarrolla si las raíces de los liners (vea Fig. 1) son debidamente podadas cuando el árbol es trasplantado a un bote más grande (izquierda). Un mal sistema de raíces se desarrolla cuando las raíces deformes no son podadas a la hora de trasplantar (derecha).

El podar las raíces de un árbol cuando es trasplantado a un bote más grande o antes de ser plantado en el jardín mejora el sistema de raíz ya que corta las raíces rectas otra vez, los segmentos radiales de raíz adjuntos al tronco se muestran en la (Fig. 4). Una bola de raíz podada va a ser más pequeña de lo que era antes de ser podada. Ciertos tipos de botes reducen el crecimiento de las raíces en la periferia de la bola de la raíz, así que no será necesario podarlas tanto. En algunos casos, los defectos de la raíz se desarrollan en el interior de la bola de la raíz. En estos casos, pode las bolas de las raíces lo suficiente para eliminar los defectos.

En las semanas y meses posteriores a la poda de raíz, nuevas raíces crecen lejos de los extremos cortados en forma de abanico (Fig. 5). Esas nuevas raíces dan una mayor estabilidad y no enredan el árbol.

Los defectos de una raíz pueden corregirse dependiendo del lugar donde este ubicado el defecto en la bola de la raíz, severidad, especies de árboles, manejo de agua, tamaño de raíces y época del año. Es más fácil cortar las raíces defectuosas cuando un árbol esta joven que cuando esta más viejo. (Fig. 6). Idealmente las raíces deben ser inspeccionadas y las raíces defectuosas tienen que ser podadas cada vez que un árbol es trasplantado a un bote más grande, reduciendo la necesidad de podar duramente las raíces mas grandes.

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Traducido por Vivian Neria
**Tree Training Cue Card**

Trees that grow to be large are more structurally sound and cost-effective to maintain when trained with a central dominant leader that extends 30 feet or more into the crown (Fig. 1, left). Vigorous, upright branches and stems that compete with the central leader can become weakly attached (Fig. 1, right).

Trees with branches spaced along the central leader, or trunk, (Fig. 1, left) are stronger than trees with branches clustered together (Fig. 1, right). Prune newly planted trees to one central leader by shortening competing stems (Fig. 2). All branches and stems should be shorter than the central leader after pruning is completed (Fig. 2, right).

Shorten or remove branches that are larger than half the trunk diameter at planting and every few years thereafter. Shorten them by cutting back to a live lateral branch (Fig 3, top drawing). This lateral branch should be pointed away from the trunk and it should not be growing upright. The central leader should be more visible in the crown center after pruning. Only large-diameter branches need to be pruned because they compete with the leader and could be weakly attached (Fig. 3, L). Small branches (Fig. 3, S) do not need pruning because they will not compete with the leader.

Shorten the largest low branches when the tree is young to keep them small (Fig. 4). These shortened branches may be removed later for clearance; removing small branches creates smaller wounds with less likelihood of decay.

Remove larger branches by making three cuts (Fig. 6). This prevents the bark from peeling or splitting off the trunk below the cut. Make the final cut back to the branch collar (enlarged area around union of branch and trunk).

The best way to shorten large or long stems and branches is to cut them back to a live lateral branch (Fig 5). This slows growth on the pruned parts and encourages growth in the dominant leader creating sound structure.

**Structural Pruning Checklist**
1. Develop and maintain a central leader.
2. Identify the lowest branch in what will become the permanent crown.
3. Prevent branches below the permanent crown from growing larger than half the trunk diameter.
4. Space main branches along the central leader.
5. Reduce vigorous upright stems back to lateral branches.

**Pruning Safety**
Prune from the ground using proper tools and safety equipment. Do not prune near power lines.

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**Tarjeta para el Entrenamiento del Árbol**

Los árboles que crecen hasta ser grandes son más sólidos estructuralmente y menos costosos de mantener cuando están entrenados con un dominante líder central que se extiende 30 pies o más hasta la corona del árbol (Fig. 1, izquierda). Ramas vigorosas y tallos verticales que compiten con el líder central pueden llegar a debilitarse (Fig. 1, derecha).

Los árboles con ramas espaciadas a lo largo del líder central, o tronco, (Fig. 1, izquierda) son mas fuertes que los árboles con ramas agrupadas (Fig. 1, derecha). Pode los árboles recién plantados a un líder central recortando los tallos que compiten con el líder central (Fig. 2). Todas las ramas y los tallos deben ser mas cortos que el líder central después de haber sido podados (Fig. 2, derecha).

Corte o remueva las ramas que son mas gruesas que la mitad del diámetro del tronco a la hora de plantar y cada dos o tres años después. Redúzcalas cortando detrás de la rama lateral viva (Fig. 3, dibujo de arriba). Esta rama lateral debe ser orientada en sentido opuesto del tronco y no debe estar creciendo en forma vertical. El líder central debe ser mas visible en el centro de la corona después de haber sido podado. Solo ramas de gran diámetro necesitan ser podadas por que compiten con el líder central y pueden llegar a adjuntarse débilmente del tronco. (Fig. 3, L). Las ramas pequeñas (Fig. 3, S) no necesitan ser podadas por que no compiten con el líder.

Recorte las ramas bajas más grandes cuando el árbol esta joven para mantener las ramas pequeñas (Fig. 4). Estas ramas recortadas pueden ser removidas mas tarde para que haya despeje. La eliminación de las ramas pequeñas crea heridas menores con menos posibilidad de decadencia.

La mejor manera de recortar tallos y ramas grandes o largas es cortando detrás de la rama lateral viva (Fig. 5). Esto retrasa el crecimiento en las partes podadas y estimula el crecimiento en el líder dominante creando una estructura fuerte.

Quite las ramas mas grandes haciendo tres cortes (Fig. 6). Esto previene a la corteza del árbol de pelarse o abrirse del tronco por debajo del corte. Haga el corte final al cuello de la rama (zona ampliada alrededor de la unión de la rama y el tronco).

**Lista de Poda Estructural**

1. Desarrolle y mantenga un líder central.
2. Identifique la rama mas baja la cual se convertirá en la corona permanente.
3. Prevenga que las ramas debajo de la corona permanente crezcan mas grandes que la mitad del diámetro del tronco.
4. Despeje las ramas principales a lo largo del líder central.
5. Reduzca los tallos vigorosos verticales a ramas laterales.

**Seguridad al Poda**

Pode desde el suelo usando las herramientas y equipo correcto de seguridad.

No pode cerca de cables de electricidad.

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Traducido por Vivian Neria
We Need Trees and Trees Need Water!

PRESERVING CALIFORNIA’S URBAN TREES DURING DROUGHT

During a drought, responsible water use includes watering urban trees. Trees make our communities healthy, beautiful, and livable. Your trees provide an immense range of human, environmental, and economic benefits:

- Trees cool our streets and our homes, reducing energy costs and saving lives during heat waves.
- Trees help make our communities more climate resilient.
- Trees improve air and water quality.
- Trees provide shade to the landscape and reduce water needs.
- Trees slow stormwater runoff and help recharge groundwater.
- Trees add value to our homes & neighborhoods.
- Trees make our streets more inviting for walking and biking.

Trees and water are both precious resources. Without watering through dry seasons, we risk losing these benefits from our urban trees. It will take 10, 20 or even 50+ years to grow back mature trees.

TIPS FOR TREE CARE DURING DROUGHT

- For established trees (3+ years old), slowly soak the root zone out toward the drip line – the area under the farthest reaches of the branches – until water soaks 12-18 inches below the surface. **Do not water close to the trunk.**

- You can use a soaker hose, a sprinkler hose attachment on a low setting, or other systems. If you choose to use a drip system, monitor it to make sure it’s functioning, add emitters in the tree’s root zone, and increase the water.

- The roots of a young tree are located mostly near the trunk. Young trees need 5 gallons of water 2 - 4 times per week. Create a small watering basin with a berm of dirt. One method is to drill a small hole near the bottom of a 5-gallon bucket, place it near the tree, fill it with water, and allow it to slowly drain into the soil.

- Mulch, Mulch, MULCH! 4 - 6 inches of mulch or leaf litter improves vigor and helps retain moisture, reducing water needs and protecting your trees.

- Let the soil dry between waterings - trees need oxygen too!

- Avoid pruning or fertilizing trees during dry seasons. Lack of water and too much pruning both stress your trees. Fertilizer encourages leafy growth, which requires more water.

- Conserve water all the time: Shower with a bucket and use that water for your trees as long as it is free of non-biodegradable soaps.
FAQ: TREES & DRY SEASONS IN CALIFORNIA

HOW OFTEN SHOULD I WATER MY MATURE DROUGHT-TOLERANT TREES?
Drought-tolerant trees, such as California oaks, need much less water than most others. Drought-tolerant trees may only need one or two deep waterings over the summer.

Trees that have never received regular irrigation may be harmed by adding extra water in the summer. Contact a certified arborist if you have questions about the health of your mature tree.

HOW CAN I TELL IF MY TREE NEEDS WATER?
The amount of water your tree needs depends on your soil and tree type. You can check the soil moisture to see if it’s time to water. The easiest way to check soil moisture is to take a long (8”+) screwdriver and poke it into the soil. It will pass easily into moist soil, but be difficult to push into dry soil. If you can’t poke it in at least 6”, it’s time to water. This technique works best in clay and loam soils.

DON’T MY TREES GET WATER WHEN I WATER MY LAWN?
Your lawn sits on the surface of the ground and has shallow roots. It needs watering a few times a week, usually with a sprinkler system. Trees need to be watered less frequently, but with deeper soaking because their roots grow deep in the earth. Lawn irrigation does not water trees effectively. It generally reaches only the first few inches of soil, encouraging weak surface roots to grow.

CAN I OVERWATER MY TREE?
Yes. When trees are overwatered, the roots struggle to breathe because the excess water takes over the air pockets that they previously had. By slowly soaking water into the soil around the tree, the water will be able to penetrate down into the root zone. Then, after a deep water, let the soil dry out before the next big soak. The hotter the temperatures, the more frequent the deep waterings.

WHY NOT LET MY TREES DIE?
Dead or dying trees can be dangerous and pose great risks to your property and your loved ones. Removal of dead or dying trees can cost thousands of dollars. Replacing trees takes more money, time, and water than keeping established ones alive.

HOW DOES SUPPLEMENTAL WATERING HELP IN SUMMER?
Keeping trees alive helps keep your home cooler, meaning less energy and fewer resources spent on cooling systems and decreased water use in other areas. Deep watering of trees also helps replenish groundwater.

WHAT ABOUT WHEN WE HAVE RAINY WINTERS?
Recent weather trends indicate hotter temperatures in general and the likelihood of more extreme weather events – such as potential flooding. We need to take good care of our trees in hot weather with regular deep watering so they can withstand harsh weather.

Above: Tree stressed due to lack of water.
How to Prune Young Shade Trees

The sketch of the tree on the right represents what we like shade trees to look like 15 years or so after planting: a tall, straight trunk and a full, healthy crown with strong, well-spaced branches … a tree that casts a broad expanse of sheltering shade, that resists damage by wind and ice, that is easy to maintain.

The sketch at the left also represents a 15-year-old tree. But it looks more like a big, rambling bush than a well-groomed shade tree. Its low-growing branches obscure streets, driveways, and walks, posing traffic hazards. Many branches have been damaged during storms, and weak, unsightly shoots sprout in abundance. Maintenance is badly needed and will now be expensive.

What made the difference?

The tree at the right was properly pruned when it was young. The tree at the left was neglected.

This bulletin explains how pruning young shade trees is a simple, straight-forward task. It is a job that needs to be done, whether by you for the trees in your yard or by your community for the trees on public property. In any case, proper pruning will save money in the long run and give you safer, more beautiful, healthy, easy-to-maintain trees.
A Tale of Two Trees

One happy day in May the all-American dream came true for two families. Brand new houses of their own in the suburbs. The good life for their kids. New friends and neighbors. More space and comfort. And good investments, too.

Now, it happened that both families loved trees, so they each promptly planted one to commemorate their new starts in life. Unknown to each other, both families planted trees that were the same species and the same age.

Looking ahead, we would expect the twin trees to eventually make a nice contribution to the neighborhood, each spreading its shade to grateful residents for generations to come. But, it was not to be. Unfortunately, Family A had the misguided belief that a tree should be

FAMILY A’S TREE — NOT PRUNED WHEN YOUNG

AT PLANTING

Family A didn’t ask for planting instructions. They knew how to plant a tree. When that was done, they believed their work was done.

Actually, they were partly correct. You may receive instructions to the contrary, but little should be done to the tree at this stage. In most cases, it is best to leave all the leaf surface possible to manufacture food that will build a larger root system. It has been found that both roots and top will be larger after one year if left unpruned.

AFTER 3-4 YEARS

By the time many transplants are in their new homes for two to four growing seasons, sprouts and suckers may appear. The root suckers protruding near the base sap strength from the tree. The sprouts are disproportionally vigorous and weakly attached to the tree. And look at the broken limb. By now, it has sprouted numerous branches just below the break — too many, in fact.

AFTER 5-7 YEARS

The baby is quickly becoming an adult. The results of not making corrections early in life are now quite visible, although some are still not obvious to the untrained eye. To the more careful observer, the form of the future crown is apparent.

15 YEARS AFTER PLANTING

Family A’s tree is now not only unattractive, but dangerous, especially when the wind is blowing. Lopsided and dense, the tree in full leaf catches the wind like a sail. Also, the narrow branch angles and multiple leaders have resulted in a weak top. The broken branch not only attracted insects, but may soon break off under the weight of too many sprouts. Decay has entered the trunk where the little bent branch tore off many years ago and a jagged stub protrudes just above it. The tree is an accident waiting to happen. It is becoming more of a liability than an asset for the property.
left alone, just as it is in the forest. Family B knew better. They realized that a tree in the yard or along a street is not growing there because ecological sorting matched its needs to the site. It is there because it was planted there; nature’s method was circumvented.

The new transplant is probably on poor soil that is then subjected to the trampling of hundreds of footsteps. It most likely is not enjoying the optimum conditions of sunlight or shade, and it certainly does not have the advantage of forest neighbors to shield it from wind, prune its lower branches, and form the outline of its crown. In short, it needs help.

FAMILY B’S TREE — PRUNED WHEN YOUNG

AT PLANTING

Family B also planted their tree correctly, but they also noticed a broken branch and a branch that was competing with the leader. Both were pruned close to the trunk. Another, swollen from the sting of an insect laying eggs (a gall), was snipped off. Otherwise, all branches were left intact to provide maximum leaf surface to manufacture food during the first year of life in its new home.

AFTER 3-4 YEARS

Root growth should be well on its way to anchoring the transplant and expanding to the size necessary to nourish the growing branches. Family B decides to cut off the root suckers and sprouts in the crown. Excessive branches are thinned to reduce competition for light, water, and nutrients, and a codominant leader is removed. A few of the lowest limbs are also removed, but others are temporarily left to help the trunk develop more taper and strength. Growth is far enough along to reveal branches that rub or are growing in an undesirable direction. Narrow angles are also eliminated for reasons explained on page 4.

AFTER 5-7 YEARS

Lower limbs are pruned off to “raise” the bottom of the crown well out of the way of human heads. The lowest limbs are now permanent. An important fact is recognized here. Branches do not move upward as a tree grows taller. The center of a branch at 5 feet will always be at 5 feet.

Higher up, a few overzealous branches are cut back so they do not protrude beyond the outline of the crown. A branch here or there is removed for more even spacing, but basically the job of sculpturing the tree is now complete.

15 YEARS AFTER PLANTING

Family B was amazed to see their tree survive a major windstorm one summer day. While many other trees in the neighborhood suffered split tops and broken limbs, theirs stood strong and firm. Proper pruning gave strength to the branches and allowed the wind to pass harmlessly through the thinned crown. Early each spring, the tree gets scrutinized and dead or damaged limbs are cut off using proper pruning methods. Otherwise, Family B has only to enjoy their tree. And what do you know? Just before they moved recently, the realtor told them it was their trees that helped sell the property so quickly.
Pruning for Strength

The first guide to pruning a young shade tree is to have a clear understanding about what pruning can do for the tree — and you.

For example, we know to prune modestly — if at all — when transplanting a new tree. An immediate objective must be to strengthen and expand the root system which is often reduced by 80-90 percent during transplanting. To meet this objective, as much as possible of the leaf surface (the tree's food factory) is left intact. Only damaged or dead limbs should be removed.

BRANCH ANGLES AND SIZE

Narrow angles signal a point of future weakness, whether in the trunk or crown. As the two branches grow, neither has sufficient space to add the wood needed for strength. Instead, they grow against each other. The effect is similar to hammering in a wedge. To prevent this and the expensive problems that are sure to follow, simply remove one of the two branches. For strength, the ideal branching angle approximates 10 or 2 o'clock.

Lateral branches should be no more than one-half to three-fourths the diameter of the trunk. As the trunk grows, it will strengthen the joint by adding wood around the branch — like a dowel in a chair leg.

CENTER OF GRAVITY

Young trees deformed by wind may be corrected by pruning. Move the tree’s center of gravity to a point more central over the trunk by cutting back the leader and laterals on the downwind side (or direction of lean) to more upright branches.

After the first year, pruning should begin in earnest. Pruning with strength as the objective is the best way to avoid weak branches later on and to prevent expensive corrections that will otherwise become necessary.

What to look for:

WATERSPROUTS AND SUCKERS

These “parasite” sprouts can occur at the base or inside the crown. They are rapidly growing, weakly attached, and upright. Usually they use more energy than they return to the tree. It is best to remove them as soon as possible when it is obvious they are vigorous sprouts.

RUBBING BRANCHES

Branches that rub result in wounds, decay, and notches. Remove one of the offending branches.

TEMPORARY BRANCHES

Branches below the lowest permanent branch can protect young bark from injury from the sun and add taper and strength to the trunk. Particularly in lawn plantings where lower limbs do not block passage or tempt vandals, the limbs may be left for three to four years after planting. Then remove over the next two to three years, beginning with the larger temporaries. Don’t let the temporary branches become large and vigorous.

Caution: When pruning diseased trees, dip your shears in household bleach before storing or moving to the next tree. Be sure to rinse and wipe dry before storage.
Pruning for Form

The objective in pruning for form is to help shape a tree that is aesthetically pleasing and serves well in the space it is to occupy. After pruning with strength in mind, look for ways to help shape the most desirable tree.

THINNING AND SPACING

Most trees benefit from thinning — removing a portion of the limbs that compete for space and light. Evenly spaced laterals, 8-12 inches apart in the young tree, is a good rule of thumb to help ensure an ideal “ladder” at maturity. Of course, this will vary by species.

FUNCTION

Try to imagine what the tree will look like when it is larger. If a limb is headed toward trouble (the house, walkway, sign, etc.), remove as early as possible in the life of the tree. Closure of the wound will be more complete when the limb is small, and it is less trouble and expense. Remember, limbs do not move upward as a tree grows in height.

DOUBLE LEADERS

Protect the leader from competition. In trees with co-dominant leaders, remove the one with a crook or other defects, or that creates a lopsided appearance.

Caution: Do not prune too high too quickly. To lift the crown, remove lower limbs throughout several years. No more than 25 percent of the live crown should ever be removed in an annual growing season.
Keys to Good Pruning

1. Prune early in the life of the tree so pruning wounds are small and so growth goes where you want it.

2. Begin your visual inspection at the top of the tree and work downward.

3. Identify the best leader and lateral branches (scaffold limbs) before you begin pruning and remove defective parts before pruning for form.

4. Don’t worry about protecting pruning cuts. For aesthetics, you may feel better painting larger wounds with a neutral-color tree paint, but the evidence is that it does not prevent or reduce decay.

5. Keep your tools sharp. One-hand pruning shears with curved blades (secateurs) work best on young trees.

6. Make safety the No. 1 priority. For high branches use a pole pruner. A major job on a big tree should be done by a professional arborist.

7. When you prune back to the trunk or a larger limb, branches too small to have formed a collar (swollen area at base) should be cut close. (Notice in the drawing of the pruning shears that the cutting blade is cutting upward for less effort and a close cut.) Otherwise, follow the rules of good pruning of larger limbs by cutting just outside the branch ridge and collar and at a slight down-and-outward angle (so as not to injure the collar). Do not leave a protruding stub.

8. When simply shortening a small branch, make the cut at a lateral bud or another lateral branch (referred to as “head” or “headback pruning”). Favor a bud that will produce a branch that will grow in a desired direction (usually outward). The cut should be sharp and clean and made at a slight angle about one-fourth of an inch beyond the bud.

WHEN TO PRUNE

This depends to a large extent on why you prune. Light pruning and the removal of dead wood can be done anytime. Otherwise, here are some guidelines, but recognize that individual species may differ.

WINTER Pruning during dormancy is the most common practice. It results in a vigorous burst of new growth in the spring and should be used if that is the desired effect. It is usually best to wait until the coldest part of winter has passed. Some species, such as maple, walnuts, and birches, may “bleed” when the sap begins to flow. This is not harmful and will cease when the tree leafs out.

SUMMER To direct the growth by slowing the branches you don’t want or to slow or “dwarf” the development of a tree or branch, pruning should be done soon after seasonal growth is complete. The reason for the slowing effect is that you reduce the total leaf surface, thereby reducing the amount of food manufactured and sent to the roots for their development and next year’s growth of the crown.

Another reason to prune in the summer is for corrective purposes. Defective limbs can be seen more easily, as well as limbs that hang down too far under the weight of leaves.

FALL Because decay fungi spread their spores profusely in the fall and healing of wounds seems to be slower on fall cuts, this is a good time to leave your pruning tools in storage.

FLOWERING TREES If your purpose for pruning is to enhance flowering:

1. For trees or shrubs that bloom in summer or fall on current year’s growth (e.g., crapemyrtle), prune in winter.

2. For trees that bloom in spring from buds on year-old wood (e.g., dogwood and flowering fruit trees), prune when their flowers fade.

Caution: In some areas of the country, diseases or insect occurrence may be affected by the time of pruning. Check with your county extension agent, city forester, an arborist, or a nursery operator to see if there are any local problems.
Pruning is a Vital Part of Any Urban Forestry Program

A survey conducted by American Forests showed that many of the nation’s urban forests are in serious trouble. To stem the decline of shade trees, more and more communities are engaging in vigorous planting programs. The magnitude of this effort may vary from a few dozen park trees in small towns to the annual planting of thousands of trees in large cities. In all cases, the investment is significant. American Forests suggests that 20 percent of an urban forestry budget should be directed at planting and early care. It follows that the early care of new trees is one of a community’s best ways to maximize its investment in planting. Systematic pruning of trees during the first several years of growth should be an integral part of the program.

A basic mission of the Tree City USA program is to encourage ongoing shade tree care. Early pruning is part of the care necessary for strong, healthy, beautiful trees. Of the four standards shown on the back page of this bulletin, time spent pruning young trees would contribute to Standard 3 as a portion of the comprehensive community forestry program. Within a tree maintenance program, urban foresters and arborists have suggested that the following steps be included:

1. Minimum pruning immediately after transplanting; within three years, pruning for strength and form; and every three years thereafter, pruning to lift the canopy of street trees (usually to 8 feet above sidewalks and 14 feet above residential streets).
2. Providing initial training and annual refresher training for crews doing the pruning. Caution: Crews that regularly prune older trees tend to overprune young trees.
3. Stressing tool sharpness and, if necessary, disinfective methods.
4. Developing an inventory that is kept up to date with all maintenance operations, and future needs being noted, including pruning.
5. Monitor annually and prune on a five- to eight-year cycle.

FOR THE BEST START, START IN THE NURSERY

A good tree management program begins with selecting good trees. When choosing trees for city plantings along streets and in parks and other public places, you will want trees with a fairly substantial caliper even if they are initially more expensive. Some things to look for:

BARE-ROOT TREE: Abundant root growth, fiberous and numerous small roots, good color, moist.

BALLED & BURLAPPED TREE: Firm soil ball with trunk securely tied. Do not accept a plant with a broken ball. Do not accept a tree with a circling root at the base of the trunk. Always carry B&B plants by the soil ball, not by the trunk, stems, or branches.

CONTAINER-GROWN TREE: Avoid trees that are root-bound in the can. Roots that circle around the edge of the container may become circling roots. Always remove can, basket, or pot when planting. (Cut any circling roots when planting.)

For some street planting, such as next to narrow sidewalks, it may be necessary to plant trees that immediately have high crowns. In this case, the height of the lowest limbs should be specified when ordering from the nursery. However, whether raising the crown during the years after planting, or as the trees are grown in the nursery, it is generally important to maintain a ratio of two-thirds green top to one-third pruned trunk.

Tree boards should be wary buyers. Carefully write specifications and be sure an expert inspects the trees before accepting delivery on behalf of the city. After a good start with good nursery stock, remember — a program of pruning young trees is a wise, long-term investment.

NOTE: Establishing a systematic pruning program qualifies for eight of ten points needed to receive a Tree City USA Growth Award. Holding a tree-care workshop or publicizing the need to prune young trees — the right way — also qualifies for points. Contact the Arbor Day Foundation for a Growth Award application and complete list of qualifying activities.

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Strong, well-developed leader (or leaders in a multiple-leader tree).
Bright, healthy bark.
Trunk and limbs free of insect or mechanical injury.
Branches well-distributed around trunk, considerably smaller caliper than trunk.
Ideal spacing between branches, at least 8”-12” for most species.
Good trunk taper.
Low branches — they are temporary, but help develop taper, promote trunk caliper growth, and prevent sun damage.
Wide angle crotches for strength.
SO SIMPLE, YET SO IGNORED

The wisdom of pruning young trees is often ignored, possibly because it is difficult to think ahead and envision what a tree will look like in the coming years. But pruning when the tree is small is well worth the effort. Here is what some professionals say about the need for more attention to pruning young trees:

You don’t want double leaders on your tree … If it’s a young tree, you can cut out one of these leaders. If it’s an old tree and it would ruin its good looks to take out one leader, you could hire a qualified arborist to cable the leaders together if they pose a threat to life or property.

– THE LATE CASS TURNBULL
The Complete Guide to Landscape Design, Renovation, and Maintenance

Just a few minutes with hand shears could solve a lot of problems later on.

– TOM WIENS, CERTIFIED ARBORIST

Arborists could do a great service and gain customers by going through new neighborhoods and pruning young trees.

– THE LATE ALEX SHIGO, TREE EXPERT AND AUTHOR

THE TREE CITY USA PROGRAM IS SPONSORED BY THE Arbor Day Foundation in cooperation with the U.S. Forest Service and National Association of State Foresters. To achieve the national recognition of being named as a Tree City USA, a town or city must meet four standards:

Standard 1: A tree board or department
Standard 2: A tree care ordinance
Standard 3: A community forestry program with an annual budget of at least $2 per capita
Standard 4: An Arbor Day observance and proclamation

Each recognized community receives a Tree City USA flag, plaque, and community entrance signs. Towns and cities of every size can qualify. Tree City USA application forms are available from your state forester, the Arbor Day Foundation at arborday.org/treecity, or your state forestry agency.

PRUNING OR TRIMMING?

Despite common usage of the word “trimming,” pruning is the better term to use when referring to removing limbs from trees. Pruning is the careful and intentional removal of selected limbs; trimming implies indiscriminate removal or shearing to produce a certain shape — best reserved for hedges and mustaches!
APPENDIX I – URBAN FORESTRY RESOURCES

TREE SELECTION

**Water Use Classification of Landscape Series (WUCOLS)** provides the irrigation water needs plant and trees used in California landscapes.

**California Invasive Plant Council (CalIPC)** provides an inventory of species that threaten California’s natural areas, including invasives.

**SelectTree: A Tree Selection Guide**. An interactive website designed to help select appropriate trees. Browse thousands of species, narrow your search to your needs, and find trees at a nursery near you.

**American Standards for Nursery Stock (ANSI Z60)**: If using a contractor, make sure that they are familiar with these standards before selecting your trees.

PLANT NURSERIES

**Devil Mountain Wholesale Nursery**, Northern California nursery locations include:
- San Ramon, 9885 Alcosta Boulevard, San Ramon, California 94583
  - Email: SanRamon@devilmountainnursery.com, Phone: (925) 829-6006 or (925) 829-6009
- Petaluma, 499 Pepper Road, Petaluma, California 94952
  - Email: Petaluma@devilmountainnursery.com, Phone: (707) 835-0250 or (707) 792-1200
- Morgan Hill, 1965 Tennant Avenue, Morgan Hill, California 95037
  - Email: MorganHill@devilmountainnursery.com, Phone: (669) 888-3738 or (669) 500-7340

**Bay Natives Nursery**
- 10 Cargo Way, San Francisco, CA
  - Contact: Paul Furman, Email: info@baynatives.com, Phone: (415) 287-6755

**East Bay Wilds Plant Nursery**
- 2777 Foothill Blvd, Oakland, CA
  - Contact: Pete Veilleux, Email: pete@eastbaywilds.com, Phone: (510) 409-5858

**Native Here Nursery**
- 101 Golf Course Drive, Berkeley, CA
  - Email: nativehere@ebcnps.org, Phone: (510) 549-0211

**The Watershed Nursery**
- 601A Canal Blvd, Richmond, CA
  - Phone: (510) 234-2222

TREE PLANTING & CARE

**California ReLeaf** lists extensive resources for selecting, planting, and caring for trees. • **International Society for Arboriculture (ISA)** has a collection of details and drawings for many scenarios of tree planting and tree care.

**International Society for Arboriculture (ISA)** has a collection of details and drawings for many scenarios of tree planting and tree care.

**CAL FIRE Standards and Specifications for Purchasing, Planting, and Maintaining Trees** offers a great reference for new and experienced tree planters alike.

**California Urban Forests Council** has great resources and videos about tree care.
UC Cooperative Extension also has resources for tree care and management.

EXPERTS

Find An Arborist is a searchable directory of certified arborists, as qualified through the International Society of Arboriculture.

UC Cooperative Extension has academic advisors and volunteer program specialists (like Master Gardeners) who can provide advice about science-based solutions as well as share pertinent research.

CAL FIRE Urban and Community Forestry Program works to expand and improve the management of trees and related vegetation in communities throughout California. Find the Regional Urban Foresters near you.

California ReLeaf Network Member organizations. Check for local resources with a community urban forestry nonprofit organization near you.

URBAN FORESTRY LINKS (ALPHABETICAL ORDER)

American Forests Tree Equity Score
https://treeequityscore.org/
San Francisco Bay Area Maps https://treeequityscore.org/map/#12.6/37.95578/-122.36993

Arbor Day Foundation’s Tree City USA

Find an Arborist
ISA (International Society of Arboriculture) https://www.treesaregood.org/

California Native Plant Society (CNPS) East Bay Chapter
https://ebcnps.org/

California ReLeaf
https://californiareleaf.org/

CALFIRE Urban and Community Forestry

Calscape
https://calscape.org/

iNaturalist
https://www.inaturalist.org/home

International Society of Arboriculture (ISA)
Online Learning, Publications, and Research https://www.isa-arbor.com/

iTee. A series of urban forest analysis tools are available for free on the iTee website. https://www.itreetools.org/

PG&E
Right Tree Right Place https://www.pge.com/righttreerightplace/
Bay Area Tree Planting Guide Bay Area Tree Planting Guide

Vegetation Management Program https://www.pge.com/trees


UFMP Toolkit. Provides a “how-to” approach to develop an Urban Forest Management Plan (UFMP). The toolkit will lead you through a planning process and provide helpful references and additional tools. https://ufmptoolkit.net/

Underground Service Alert (USA) North
https://usanorth811.org

Urban Forest Ecosystems Institute (UFEI) SelecTree
https://ufei.calpoly.edu/, SelecTree selectree.calpoly.edu

USDA Urban Tree Canopy in California
https://www.fs.usda.gov/detailfull/r5/communityforests/?cid=fseprd647442&width=full

USDA Forest Service Center for Urban Forest Research
http://www.fs.fed.us/psw/programs/cufr/tree_guides.php

Urban Tree Foundation
http://www.urbanbtree.org/

Vibrant Cities Lab
https://www.vibrantcitieslab.com/

LINKS TO LOCAL ORGANIZATIONS

Contra Costa County Landscape Standards and Guidelines https://www.contracosta.ca.gov/2147/Landscape-Standards

Bay-Friendly Landscaping and Gardening Coalition www.bayfriendlycoalition.org/

Canopy https://canopy.org/

Groundwork Richmond http://www.groundworkrichmond.org/

Pogo Park https://pogopark.org/

Richmond Trees https://www.richmondtrees.org/

The Watershed Project https://thewatershedproject.org/

Urban Tilth https://urbantilth.org/

SAN FRANCISCO RESOURCES

Bee-Friendly Nurseries https://sfenvironment.org/plant-nurseries-bee-friendly *

California Native Plant Society, Yerba Buena Chapter http://cnps-verbabuena.org/ *

City Trees https://sfenvironment.org/city-trees *

Friends of the Urban Forest https://www.fuf.net/

Green Connections https://sfplanning.org/project/green-connections?page=3002 *
Local Plant Nurseries  [http://sfplantfinder.org/resources.html#plant-nurseries]

Park Forestry Improvement Program [https://sfrecpark.org/park-improvements/2008-clean-safe-bond/park-forestry-program/]

Recreation and Open Space Element [http://openspace.sfplanning.org/]

San Francisco Plant Finder [http://sfplantfinder.org/]

San Francisco Trees [http://www.sftrees.com/]

SF Pollinators Portal [https://sfenvironment.org/pollinators]

Sidewalk Landscaping [http://sfpublicworks.org/services/permits/sidewalk-landscaping]

Street Parks Program [http://sfpublicworks.org/streetparks]

Street Trees and Plants [http://www.sfpublicworks.org/trees]

StreetTreeSF [https://sfpublicworks.org/streettreesf]

Urban Forest Master Plan [https://sfplanning.org/urban-forest-plan?page=3166]

Urban Forestry Council [https://sfenvironment.org/about/taskforce/urban-forestry-council]

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California Native Plant Society, Pogo Park, Groundwork Richmond, The Watershed Project, Richmond Trees, City of Richmond, Contra Costa County Staff, Vallier Design Associates

*Adapted from the San Francisco Public Works’ list of Selected Resources in the 2021 Recommended Street Tree Species List.

**TREE PLANTING DETAILS AND SPECIFICATIONS**

James Urban, Dr. Ed Gilman of the University of Florida, and Brian Kempf and Tyson Carroll of the Urban Tree Foundation, have developed a modern, up-to-date and peer reviewed set of details and specifications in AutoCAD and PDF formats for the green industry. These are designed specifically for landscape architects, engineers, architects, contractors, urban foresters, arborists, municipalities and state agencies. Visit the site directly at [https://www.jamesurban.net/specifications].

All are open source, free and can be edited by the user. You and your colleagues are free to use them in projects without charge and without credit to the Urban Tree Foundation or any of the project team members. Although you are encouraged to modify these details and specifications to fit your specific site and project needs, make your changes only after carefully considering all the pertinent variables at the planting site.

Funding for this project was provided by the California Department of Forestry Urban Forestry Program.

**DETAILS**

**Planting details (ZIP)**

Trees in poorly drained soil ([DWG, PDF])
Tree with berm (modified soil) ([DWG, PDF])
Tree with berm (unmodified soil) ([DWG, PDF])
Tree on slope 5% (20:1) to 50% (2:1) (modified soil) ([DWG, PDF])
Tree on slope 5% (20:1) to 50% (2:1) (unmodified soil) ([DWG, PDF])
Tree with pavement root barriers (DWG, PDF)
Tree with parking lot island root barriers (DWG, PDF)

**Staking details (ZIP)**

- 3 Lodge poles (DWG, PDF)
- 2 Lodge poles (DWG, PDF)
- Single metal stake (DWG, PDF)
- Wooden below ground system (DWG, PDF)

**Planting Soil Modifications (ZIP)**

- Soil modification drain line cleanouts (DWG, PDF)
- Soil modification drain line (daylight outfall) (DWG, PDF)
- Soil modification drain pipe inlet outfall (DWG, PDF)
- Soil modification drain pipe installation (DWG, PDF)
- Radial trenching (DWG, PDF)
- Root barriers parking lot islands (DWG, PDF)
- Modified existing soil compacted subsoil (fracturing) (DWG, PDF)
- Modified existing soil compacted subsoil (ripping) (DWG, PDF)
- Modified existing soil compacted soil (trenching) (DWG, PDF)
- Modified existing soil compacted surface soil (DWG, PDF)
- Modified existing soil compacted soil in tree dripline (DWG, PDF)
- Existing soil minor modification (DWG, PDF)
- Modified existing soil installed planting mix (DWG, PDF)

**Inspection (observation) (ZIP)**

- Crown - High branched (DWG, PDF)
- Crown - Low branched (DWG, PDF)
- Crown - Multi (DWG, PDF)
- Root - Ball and burlapped (field-grown) (DWG, PDF)
- Root - Container (DWG, PDF)

**Correction (modification) (ZIP)**

- Crown correction (DWG, PDF)
- Rootball shaving (DWG, PDF)
- Root correction balled and burlapped (DWG, PDF)
- Root correction container (DWG, PDF)

**Tree Protection (ZIP)**

- Boring under crown dripline (DWG, PDF)
- Tree protection (DWG, PDF)
- Maintenance road (DWG, PDF)

**SPECIFICATIONS**

- Planting (PDF, Word)
- Planting soil (PDF, Word)
- Irrigation (PDF, Word)
- Tree protection (PDF, Word)

**All Specifications - DWG, ZIP**
Resources:


