TREE PRESERVATION

Trees are one of the things in historic neighborhoods that residents identify with most. Residents are protective of their neighborhood trees. The City of Pomona recognizes that this is one of the features that give historic neighborhoods their character. The City also recognizes that trees are damaged and eventually die. The guidelines in this section relate to the care of trees and the process if a tree needs to be removed. The City of Pomona is committed to reforesting our historic districts, to protect the character of our neighborhoods and to provide environmental benefits to the public.

Mature trees provide many benefits to the public. They provide shade, which reduces the ambient temperature, and the heat on houses (up to 40 degrees), which reduces the need for air conditioning. The shade also makes the streets more walkable. Trees are also good for the environment by reducing the heat island effect, cleaning the air, and sequestering carbon, which reduces the amount of greenhouse gases in the air.

PROTECTED TREES

The City of Pomona has, as part of the tree protection and preservation program, a protected species list. Any tree listed and meeting the minimum size (diameter) requires approval before it can be removed. Trees that are dead, diseased, or a danger to public welfare, may be approved by Staff. Healthy trees that are not dangerous may be removed with the approval of the Historic Preservation Commission.

TREE PROTECTION ZONES

The protected zone of a tree on historic properties is the area on the ground beneath the "dripline" or canopy of the tree. Any work proposed within the protected zone requires review to determine if the proposed work could affect the tree, causing its death. Alterations to the proposed project may be necessary to protect the tree.

ROOT CUTTING

Great care needs to be taken when cutting roots within the dripline of a tree. cutting too many roots can cause the tree to die, or damage it to a point that it can fall.

IRRIGATION LINES NEAR TREES

Irrigation lines should be placed far enough from the tree to avoid existing and future tree roots. Tree roots can break irrigation lines. This can reduce water pressure, and potentially cause the overwatering of the tree (See Over-Watering Below)

OVER-WATERING

Overwatering trees can cause severe damage to the roots of a tree. Over-watering can lead to root rot, which will damage the tree and make it more vulnerable to falling over in windy conditions.

WATERING STREET TREES

Property owners are required to water street trees in parkways in front of their property. Failure to water street trees could result in Code Enforcement Action. In addition, the City can water the trees and charge the property owner the cost of watering the trees.

TREE TRIMMING STANDARDS

The City of Pomona requires all trees to be trimmed using the ANSI 300 Pruning Standards. Any tree not pruned to these standards could require the evaluation of the tree to determine if replacement of the tree is necessary. Any replacement would follow the City's Replacement Methodology and would be considered retroactive for determination of the replacement amount.

The ANSI 300 Standards **require an Arborist** to oversee any trimming of a tree.

The ANSI 300 tree pruning standards are at the end of this chapter.

TREE REPLACEMENT METHODOLOGY

The City of Pomona has developed a replacement methodology for trees that are approved for removal. The intention of the methodology is to replace a tree with a tree of equal replacement value. It is based on the type of tree proposed for removal, its size (diameter at breast height or dbh)(dbh is equal to 4 feet 6 inches), and the proposed replacement tree species.

The Replacement Methodology is as follows:

Tree Type x Heritage Tree x Retroactive Permit = Total Replacement Value

Maximum Replacement Ratio is 8:1

TREE TYPE

Category 1:

1:1: Any tree replaced with the same species, a tree on the Preferred Tree List, or a tree similar in height and canopy size to the trees on the Preferred Tree List.

For trees not on the Preferred Tree List, City staff and the City Arborist will compare a proposed tree's characteristics with characteristics of the trees on the Preferred Tree List and use iTrees software to verify that the proposed tree is similar to trees on the preferred tree list.

Category 2:

2:1: Any tree replaced with a species that does not meet the Category 1 requirements.

HERITAGE TREES

Any tree removed over twenty-four (24) inches in diameter shall be replaced at a rate double the rate specified under Tree Type (2:1 replacement rate).

RETROACTIVE PERMITS

All applications asking for approval of a tree removed prior to approval is considered a Retroactive approval. Retroactive approval are replaced at double the combined rate of Tree Type and Heritage Tree rates (2:1 replacement rate).

EXAMPLES

The following examples illustrate how the replacement value will be calculated under the research methodology.

Example #1

Approval to replace a 20-inch London Plane tree to be replaced with a London Plane tree.

Tree Type:	1:1 (Same Tree Species)
Heritage Tree:	N/A
Retroactive Permit:	N/A
Total:	1:1

Example #2

Approval to replace a 28-inch American Sweet Gum tree to be replaced with a California Sycamore.

Tree Type:	1:1 (California Sycamore on Preferred List)
Heritage Tree:	2:1
Retroactive Permit:	N/A
Total:	2:1

Example #3

Retroactive removal of a 30-inch diameter Camphor tree to be replaced with a Navel Orange tree.

Tree Type:	2:1
Heritage Tree:	2:1
Retroactive Permit:	2:1
Total:	8:1

MINIMUM TREE SIZE

Minimum tree size for replanting.

The city requires that any replacement tree be a minimum of 15-gallon tree.

PREFERRED TREE LIST

The Preferred List consist of trees that have been identified as trees that will grow well in Pomona's climate, are drought tolerant, have good carbon sequestration, and are good shade trees. These trees are good for Pomona's climate. They clean the air, provide shade that helps reduce the heat island effect, and help reduce the use of water. This list does not apply to street trees. The City has a separate Street Tree List that designates specific species to every street in the historic districts.

PREFERRED TREE LIST SPECIES

Common Name	Scientific Name
Blackwood Acacia	Acacia melanoxylon
Italian Alder	Alnus cordat
Incense Cedar	Calocedrus decurrens
Ironwood	Casuarina equisetifolia
Carob tree	Ceratonia silique
Arizona cypress	Cupressus arizonica
Indian Rosewood	Dalbergia sissoo
River red gum	Eucalyptus camaldulensis
Red ironbark	Eucalyptus sideroxylon
Majestic Beauty' ash	Fraxinus uhdei 'Majestic Beauty'
Thornless Honey Locust	Gleditsia tricanthos var. inermis
Silk oak	Grevillea robusta
Black walnut	Juglans nigra
Fruitless mulberry	Morus alba 'Fruitless'
Torrey pine	Pinus torreyana
Western cottonwood	Populus fremontii 'Nevada'
Carolina Laurel Cherry	Prunus caroliniana
Carrot Wood	Cupaniopsis anacardioides
Fruitless Olive Tree	Olea europaea 'Swan Hill"
Australian Willow	Geijera parviflora
Purple-leaf Acacia	Acacia baileyana 'Purpurea'
Goldenrain Tree	Koelreuteria paniculata
Common Hackberry / Western Redbud	Celtis occidentalis
Hollyleaf Cherry	Prunus ilicifolia
Brisbane Box	Lophostemon confertus
California Sycamore	Platanus racemosa
Coast Live Oak	Quercus agrifolia

TREE PHOTOS FROM SELECTREE, URBAN FOREST ECOSYSTEMS INSTITUTE, CAL POLY SAN LUIS OBISPO
HTTP://UFEI.CALPOLY.EDU/

POMONA PLANTING CHARACTERISTICS

The Sunset Western Garden Handbook has been one of the most trusted sources for gardening and planting information for over 80 years. Pomona is in the Sunset Western Garden Zone 18. All the trees in the Preferred Tree List can be planted in Zone 18.

We have also included for reference the USDA hardiness zones. The zones were created to help determine which plants are likely to thrive in a location. It is based on the average minimum winter temperature divided into 10-degree zones. Pomona is in either the USDA Hardiness Zone 9b or 10a depending on where in the City you are located.

BLACKWOOD ACACIA

ACACIA MELANOXYLON

The Blackwood Acacia is native of Eastern Australia and grows best in well-drained fertile soil. It grows very fast and has a good canopy size.

Tree Type:	Evergreen
Maximum Height:	50 feet
Canopy Width:	20 feet
Growth Rate:	36-127 inches per year
Sunset Western Garden Zones:	8-9, 13-24
USDA Hardiness Zones:	9, 10, and 11
Sun Exposure:	Partial Shade to Full Sun
SelecTree Water Usage Rating (at Planting):	Low

ITALIAN ALDER

ALNUS CORDAT

The Italian Alder grows best with regular deep watering. Its roots can spread and be invasive if they are poorly watered. The tree is native to Italy and Corsica. It can be susceptible to Beetle Borers. This tree is not suitable in small areas such as side yards.

Tree Type:	Deciduous
Maximum Height:	50 feet
Canopy Width:	25 feet
Growth Rate:	36-127 inches per year
Sunset Western Garden Zones:	2-9, 14-24
USDA Hardiness Zones:	5, 6, and 7
Sun Exposure:	Partial Shade to Full Sun
SelecTree Water Usage Rating (at Planting):	Medium

INCENSE CEDAR

CALOCEDRUS DECURRENS

The Incense Cedar tree is a native to California. The tree grows slowly when first planted, but the growth rate increases when established.

Tree Type:	Evergreen
Maximum Height:	90 feet
Canopy Width:	10-15 feet
Growth Rate:	12-24 inches per year
Sunset Western Garden Zones:	2-12, 14-24
USDA Hardiness Zones:	5, 6, 7, and 8
Sun Exposure:	Partial Shade to Full Sun
Selectree Water Usage Rating (at Planting):	Medium

IRONWOOD

CASUARINA EQUISETIFOLIA

The Ironwood tree is a fast-growing tree found throughout the Pacific Islands. It is native to French Polynesia, Australia, Malaysia, and Burma (Myanmar)

Tree Type:	Evergreen
Maximum Height:	65 feet
Canopy Width:	20 feet
Growth Rate:	36 inches per year
Sunset Western Garden Zones:	8-9, 12-24, H1, H2
USDA Hardiness Zones:	9, and 10
Sun Exposure:	Partial Shade to Full Sun
Selectree Water Usage Rating (at Planting):	Low

CAROB TREE

CERATONIA SILIQUE

The Carob Tree is known for being drought-tolerant. It is native to the Mediterranean region, making it suitable for California's climate.

Tree Type:	Evergreen
Maximum Height:	40 feet
Canopy Width:	30-40 feet
Growth Rate:	24 inches per year
Sunset Western Garden Zones:	9, 13-16, 18-24, H1, H2
USDA Hardiness Zones:	9-11
Sun Exposure:	Partial Shade to Full Sun
Selectree Water Usage Rating (at Planting):	Low

ARIZONA CYPRESS

CUPRESSUS ARIZONICA

This species of Cypress is native to Central Arizona. It is drought tolerant and is suitable for California's climate.

Tree Type:	Evergreen
Maximum Height:	40 feet
Canopy Width:	20 feet
Growth Rate:	12-36 inches per year
Sunset Western Garden Zones:	7-24
USDA Hardiness Zones:	7-9
Sun Exposure:	Full Sun
Selectree Water Usage Rating (at Planting):	Low

INDIAN ROSEWOOD

DALBERGIA SISSOO

Native to India, the Indian Rosewood tree takes very little water to establish it, making it ideal for Pomona. It is a fast growing, large shade tree that will lose most, if not all its leaves in the winter. It has a spreading root system and thrives in lawns. It is drought-tolerant.

Tree Type:	Deciduous – Partly Deciduous
Maximum Height:	60 feet
Canopy Width:	30-40 feet
Growth Rate:	24-36 inches per year
Sunset Western Garden Zones:	13, 18, 19, 21-24
USDA Hardiness Zones:	9-11
Sun Exposure:	Partial Shade to Full Sun
Selectree Water Usage Rating (at Planting):	Very Low

RIVER RED GUM

EUCALYPTUS CAMALDULENSIS

This evergreen tree is in the Eucalyptus family and is not appropriate in small areas. It is drought-tolerant and native to Australia. It should have a large planting area (over 10 feet) for best results. It grows extremely fast, and is a very large shade tree, but can cause a litter problem with the bark and twigs.

Tree Type:	Evergreen
Maximum Height:	150 feet
Canopy Width:	40-105 feet
Growth Rate:	36-127 inches per year
Sunset Western Garden Zones:	5-6, 8-24
USDA Hardiness Zones:	9-10
Sun Exposure:	Partial Shade to Full Sun
Water Usage Rating (at Planting):	Low

RED IRONBARK

EUCALYPTUS SIDEROXYLON

Another member of the Eucalyptus family this variety does not get as big as its cousin does, but is still a large shade tree. It is native of Eastern Australia.

Tree Type:	Evergreen
Maximum Height:	90 feet
Canopy Width:	30-60 feet
Growth Rate:	36-127 inches per year
Sunset Western Garden Zones:	5-6, 8-24
USDA Hardiness Zones:	9-10
Sun Exposure:	Partial Shade to Full Sun
Water Usage Rating (at Planting):	Low

MAJESTIC BEAUTY EVERGREEN ASH

FRAXINUS UHDEI 'MAJESTIC BEAUTY'

This variety of Ash tree is large, fast growing shade tree. It is susceptible to root rot so be sure not to over water it.

Tree Type:	Evergreen
Maximum Height:	80 feet
Canopy Width:	60 feet
Growth Rate:	36-127 inches per year
Sunset Western Garden Zones:	9, 12-24
USDA Hardiness Zones:	9-10
Sun Exposure:	Partial Shade to Full Sun
Water Usage Rating (at Planting):	Medium

THORNLESS HONEY LOCUST

GLEDITSIA TRICANTHOS VAR. INERMIS

This variety of Honey Locust is durable and adaptable to a variety of soil conditions. It is the most commonly sold of the Honey Locust trees since it does not have the large thorns on its bark and stems. It is native to the Chicago Area.

Tree Type:	Deciduous
Maximum Height:	60 feet
Canopy Width:	40 feet
Growth Rate:	36-127 inches per year
Sunset Western Garden Zones:	1-16, 18-20
USDA Hardiness Zones:	4-9
Sun Exposure:	Partial Shade to Full Sun
Water Usage Rating (at Planting):	Medium

SILK OAK

GREVILLEA ROBUSTA

Native to Eastern Australia, the Silk Oak is one of about 360 species of Grevillea. Its wood is similar in appearance to Oak, and is used in making furniture and other products, similar to an Oak tree. It is fast growing, large shade tree. A good local example of how big the trees can get is Euclid Avenue in Upland and Ontario. They are the parkway trees for the avenue.

Tree Type:	Evergreen
Maximum Height:	150 feet
Canopy Width:	30-35 feet
Growth Rate:	36-127 inches per year
Sunset Western Garden Zones:	8-9, 12-24, H1, H2
USDA Hardiness Zones:	8-10
Sun Exposure:	Full Sun
Water Usage Rating (at Planting):	Low

BLACK WALNUT

JUGLANS NIGRA

The Black Walnut tree is native to Eastern North America. The tree is drought-tolerant and can handle both hot and cold weather. It can produce a toxin that is harmful to other plants. The toxin is at its greatest concentration at the dripline, so care should be taken when determining placement of the tree.

Tree Type:	Deciduous
Maximum Height:	100 feet
Canopy Width:	70 feet
Growth Rate:	24 inches per year
Sunset Western Garden Zones:	1-9, 14-21
USDA Hardiness Zones:	5-9
Sun Exposure:	Partial Shade to Full Sun
Water Usage Rating (at Planting):	Medium

FRUITLESS MULBERRY

MORUS ALBA 'FRUITLESS'

The Fruitless Mulberry is a good yard shade tree since it does not get to big. It is fast growing and drought-tolerant.

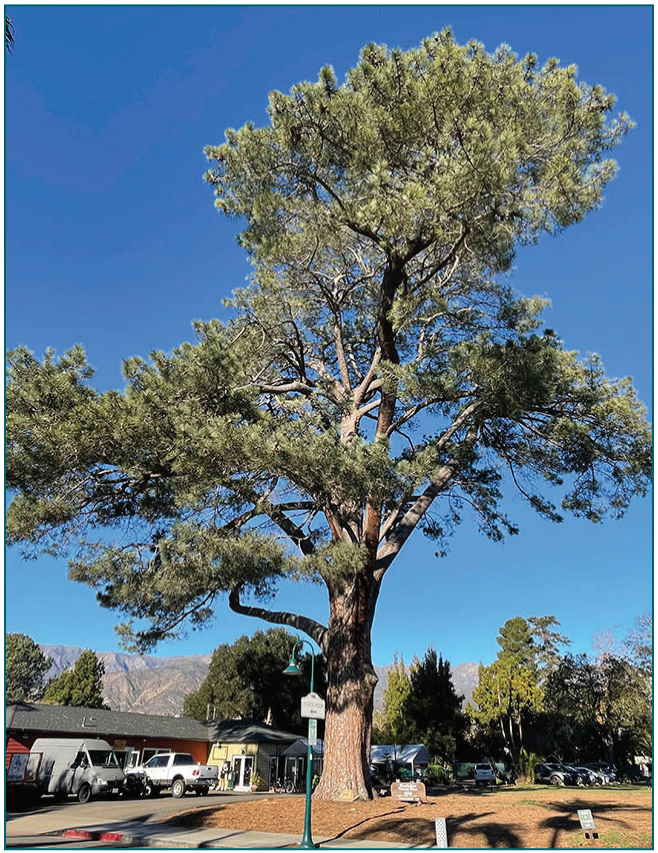
Tree Type:	Evergreen
Maximum Height:	30 feet
Canopy Width:	30-45 feet
Growth Rate:	36-127 inches per year
Sunset Western Garden Zones:	2-24
USDA Hardiness Zones:	3-9
Sun Exposure:	Partial Shade to Full Sun
Water Usage Rating (at Planting):	Medium

TORREY PINE

PINUS TORREYANA

Native to California, the Torrey Pine is found primarily in San Diego County. It is a fast growing tree.

Tree Type:	Evergreen
Maximum Height:	50 feet
Canopy Width:	20-25 feet
Growth Rate:	36 inches per year
Sunset Western Garden Zones:	8-9, 14-24
USDA Hardiness Zones:	8-10
Sun Exposure:	Partial Shade to Full Sun
Water Usage Rating (at Planting):	Medium



WESTERN COTTONWOOD

POPULUS FREMONTII 'NEVADA'

Also known as the Fremont Cottonwood, the Western Cottonwood is a California native. It is most commonly found in riparian areas. It has an extensive root system so be sure it is away from buildings, underground pipes and sidewalks.

Tree Type:	Deciduous
Maximum Height:	80 feet
Canopy Width:	30-50 feet
Growth Rate:	36 inches per year
Sunset Western Garden Zones:	1-12, 14-21
USDA Hardiness Zones:	3-9
Sun Exposure:	Full Sun
Water Usage Rating (at Planting):	High

CAROLINA LAUREL CHERRY

PRUNUS CAROLINIANA

The Carolina Cherry is a drought tolerant tree that can withstand dryness, winds, and heat. It is native to the Southeastern United States. Its litter can be a problem on paved areas.

Tree Type:	Evergreen
Maximum Height:	30 feet
Canopy Width:	15-25 feet
Growth Rate:	36 inches per year
Sunset Western Garden Zones:	5-24
USDA Hardiness Zones:	7-10
Sun Exposure:	Partial Shade to Full Sun
Water Usage Rating (at Planting):	Medium

CARROT WOOD

CUPANIOPSIS ANACARDIOIDES

The Carrot Wood withstands hot and dry winds. It is native to Australia and are a slow growing tree compared to others on this list. Some trees drop fruit, which can be a nuisance depending on the tree location. Some never produce any fruit.

Tree Type:	Evergreen
Maximum Height:	40 feet
Canopy Width:	30 feet
Growth Rate:	12-24 inches per year
Sunset Western Garden Zones:	16-24
USDA Hardiness Zones:	10-11
Sun Exposure:	Partial Shade to Full Sun
Water Usage Rating (at Planting):	Medium

FRUITLESS OLIVE TREE

OLEA EUROPAEA 'SWAN HILL"

Also known as the Swan Hill Olive tree, this variety of olive tree is fruitless and has little pollen. It is a moderate growing tree. The species was discovered near the town of Swan Hill in Victoria, Australia. They are drought-tolerant.

Tree Type:	Evergreen
Maximum Height:	30 feet
Canopy Width:	20-25 feet
Growth Rate:	24 inches per year
Sunset Western Garden Zones:	8-9, 11-24
USDA Hardiness Zones:	8-10
Sun Exposure:	Partial Shade to Full Sun
Water Usage Rating (at Planting):	Low

AUSTRALIAN WILLOW

GEIJERA PARVIFLORA

The Australian Willow has non-invasive root system, which makes them good trees for street parkways and areas with limited space. In addition, the Australian native tree is fire resistant since its leaves are filled with water.

Tree Type:	Evergreen
Maximum Height:	35 feet
Canopy Width:	20 feet
Growth Rate:	24-36 inches per year
Sunset Western Garden Zones:	8-9, 12-24
USDA Hardiness Zones:	9-11
Sun Exposure:	Partial Shade to Full Sun
Water Usage Rating (at Planting):	Medium

PURPLE-LEAF ACACIA

ACACIA BAILEYANA 'PURPUREA'

A native of Southeastern Australia, this member of the Acacia family does have a short lifespan of approximately 30 years. It is often used as an accent tree because of its purple flower, but it has a dense canopy and is a good shade tree.

Tree Type:	Evergreen
Maximum Height:	30 feet
Canopy Width:	20-30 feet
Growth Rate:	36-127 inches per year
Sunset Western Garden Zones:	8-9, 13-24
USDA Hardiness Zones:	8-10
Sun Exposure:	Partial Shade to Full Sun
Water Usage Rating (at Planting):	Very Low

GOLDENRAIN TREE

KOELREUTERIA PANICULATA

The Goldenrain tree is native to China and can survive temperatures down to zero degrees. It was first introduced to America by Thomas Jefferson. Its yellow flowers bloom in summer and makes a good accent tree or a shade tree.

Tree Type:	Deciduous
Maximum Height:	35 feet
Canopy Width:	25-40 feet
Growth Rate:	12-24 inches per year
Sunset Western Garden Zones:	2-24
USDA Hardiness Zones:	6-9
Sun Exposure:	Partial Shade to Full Sun
Water Usage Rating (at Planting):	Medium

COMMON HACKBERRY / WESTERN REDBUD

CELTIS OCCIDENTALIS

Native to Eastern North America, the Hackberry can grow well in a variety of climates and is tolerant of urban conditions. The bark can be rough and appear similar to the bark of a cork tree.

Tree Type:	Deciduous
Maximum Height:	80 feet
Canopy Width:	40-50 feet
Growth Rate:	24-36 inches per year
Sunset Western Garden Zones:	1-24
USDA Hardiness Zones:	2-9
Sun Exposure:	Partial Shade to Full Sun
Water Usage Rating (at Planting):	Medium

HOLLYLEAF CHERRY

PRUNUS ILICIFOLIA

The Hollyleaf Cherry tree is native to Southern California. It is a drought-tolerant tree that is easy to care for.

Tree Type:	Evergreen
Maximum Height:	30 feet
Canopy Width:	10-25 feet
Growth Rate:	24 inches per year
Sunset Western Garden Zones:	5-9, 12-24
USDA Hardiness Zones:	9-10
Sun Exposure:	Partial Shade to Full Sun
Water Usage Rating (at Planting):	Low

BRISBANE BOX

LOPHOSTEMON CONFERTUS

Another tree native to Australia, the Brisbane box is a tree that is not only drought-tolerant, but also tolerant of smog, making it ideal for urban settings.

Tree Type:	Evergreen
Maximum Height:	50 feet
Canopy Width:	10-30 feet
Growth Rate:	24-36 inches per year
Sunset Western Garden Zones:	18-24
USDA Hardiness Zones:	10-11
Sun Exposure:	Partial Shade to Full Sun
Water Usage Rating (at Planting):	Medium

CALIFORNIA SYCAMORE

PLATANUS RACEMOSA

The California Sycamore is found in riparian areas in California. It can tolerate extreme heat and extreme winds.

Tree Type:	Evergreen
Maximum Height:	80 feet
Canopy Width:	20-50 feet
Growth Rate:	36 inches per year
Sunset Western Garden Zones:	4-24
USDA Hardiness Zones:	7-10
Sun Exposure:	Partial Shade to Full Sun
Water Usage Rating (at Planting):	High

COAST LIVE OAK

QUERCUS AGRIFOLIA

The Coast Live Oak is found throughout Southern California. It can tolerate extreme heat, extreme winds and drought. It will drop acorns in fall or winter.

Tree Type:	Evergreen
Maximum Height:	70 feet
Canopy Width:	20-70 feet
Growth Rate:	24 inches per year
Sunset Western Garden Zones:	7-9, 14-24
USDA Hardiness Zones:	8-10
Sun Exposure:	Partial Shade to Full Sun
Water Usage Rating (at Planting):	Medium

ANSI 300 TREE PRUNING STANDARDS

FORWARD

(This foreword is not part of American National Standard A300 Part 1-2001.)

An industry-consensus standard must have the input of the industry that it is intended to affect. The Accredited Standards Committee A300 was approved June 28, 1991. The committee includes representatives from the residential and commercial tree care industry, the utility, municipal, and federal sectors, the landscape and nursery industries, and other interested organizations. Representatives from varied geographic areas with broad knowledge and technical expertise contributed.

The A300 standard can be best placed in proper context if one reads its Scope, Purpose, and Application. This document presents performance standards for the care and maintenance of trees, shrubs, and other woody plants. It is intended as a guide in the drafting of maintenance specifications for federal, state, municipal, and private authorities including property owners, property managers, and utilities.

The A300 standard stipulates that specifications for tree work should be written and administered by a professional possessing the technical competence to provide for, or supervise, the management of woody landscape plants. Users of this standard must first interpret its wording, then apply their knowledge of growth habits of certain plant species in a given environment. In this manner, the user ultimately develops their own specifications for plant maintenance.

ANSI A300 Part 1 – Pruning, should be used in conjunction with the rest of the A300 standard when writing specifications for tree care operations.

Suggestions for improvement of this standard should be forwarded to: NAA300 Secretary, c/o National Arborist Association, 3 Perimeter Rd. - Unit 1, Manchester, NH 03103, USA or Email: naa@natlarb.com.

This standard was processed and approved for submittal to ANSI by Accredited Standards Committee on Tree, Shrub, and Other Woody Plant Maintenance Operations – Standard Practices, A300. Committee approval of the standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard, the A300 committee had the following members:

Tim Johnson, Chair (Artistic Arborist, Inc.)
Bob Rouse, Secretary (National Arborist Association, Inc.)
Organizations Represented Name of Representative
American Forests Staff (Observer)
American Nursery and Landscape Association Craig J. Regelbrugge
American Society of Consulting Arborists Andrew Graham
Donald Blair (Adviser)
Beth Palys (Adviser)
American Society of Landscape Architects Ron Leighton
Asplundh Tree Expert Company Geoff Kempter
Associated Landscape Contractors of America Preston Leyshon
Jeff Bourne (Alt.)
The Davey Tree Expert Company Joseph Tommasi
Dick Jones (Alt.)
Richard Rathjens (Adviser)
The F.A. Bartlett Tree Expert Company Peter Becker
Dr. Thomas Smiley (Alt.)
International Society of Arboriculture Ed Brennan
Sharon Lilly (Alt.)
National Arborist Association Ronald Rubin
Tom Mugridge (Alt.) National Park Service Robert DeFeo
Professional Grounds Management Society Kevin O'Donnell
Society of Municipal Arborists Andrew Hillman
U.S. Forest Service Ed
Macie_ Mike Galvin (Alt.)
Philip D. Rodbell (Alt.)
Utility Arborist Association Jeffery Smith
Matt Simons (Alt.)

AMERICAN NATIONAL STANDARD FOR TREE CARE OPERATIONS –

TREE, SHRUB, AND OTHER WOODY PLANT MAINTENANCE – STANDARD PRACTICES (PRUNING)

1 ANSI A300 STANDARDS

1.1 Scope
ANSI A300 standards present performance standards for the care and maintenance of trees, shrubs, and other woody plants.

1.2 Purpose
ANSI A300 standards are intended as guides for federal, state, municipal and private authorities including property owners, property managers, and utilities in the drafting of their maintenance specifications.

1.3 Application
ANSI A300 standards shall apply to any person or entity engaged in the business, trade, or performance of repairing, maintaining, or preserving trees, shrubs, or other woody plants.

1.4 Implementation
Specifications for tree maintenance should be written and administered by an arborist.

2 PART 1 – PRUNING STANDARDS

2.1 Purpose
The purpose of this document is to provide standards for developing specifications for tree pruning.

2.2 Reasons for pruning
The reasons for tree pruning may include, but are not limited to, reducing risk, maintaining or improving tree health and structure, improving aesthetics, or satisfying a specific need. Pruning practices for agricultural, horticultural production, or silvicultural purposes are exempt from this standard.

2.3 Safety
2.3.1 Tree maintenance shall be performed only by arborists or arborist trainees who, through related training or on-the-job experience, or both, are familiar with the practices and hazards of arboriculture and the equipment used in such operations.

2.3.2 This standard shall not take precedence over arboricultural safe work practices.

2.3.3 Operations shall comply with applicable Occupational Safety and Health Administration (OSHA) standards, ANSI Z133.1, as well as state and local regulations.

3 NORMATIVE REFERENCES

The following standards contain provisions, which, through reference in the text, constitute provisions of this American National Standard. All standards are subject to revision, and parties to agreements based on this American National Standard shall apply the most recent edition of the standards indicated below.

- ANSI Z60.1, Nursery stock
- ANSI Z133.1, Tree care operations - Pruning, trimming, repairing, maintaining, and removing trees, and cutting brush - Safety requirements
- 29 CFR 1910, General industry 1)
- 29 CFR 1910.268, Telecommunications 1)
- 29 CFR 1910.269, Electric power generation, transmission, and distribution 1)
- 29 CFR 1910.331 - 335, Electrical safety-related work practices 1)

4 DEFINITIONS

4.1 anvil-type pruning tool: A pruning tool that has a sharp straight blade that cuts against a flat metal cutting surface, in contrast to a hook-and-bladetype pruning tool (4.21).

4.2 apical dominance: Inhibition of growth of lateral buds by the terminal bud.

4.3 arboriculture: The art, science, technology, and business of commercial, public, and utility tree care.

4.4 arborist: An individual engaged in the profession of arboriculture who, through experience, education, and related training, possesses the competence to provide for or supervise the management of trees and other woody plants.

4.5 arborist trainee: An individual undergoing on-the-job training to obtain the experience and the competence required to provide for or supervise the management of trees and other woody plants. Such trainees shall be under the direct supervision of an arborist.

4.6 branch bark ridge: The raised area of bark in the branch crotch that marks where the branch and parent meet.

4.7 branch collar: The swollen area at the base of a branch.

4.8 callus: Undifferentiated tissue formed by the cambium around a wound.

4.9 cambium: The dividing layer of cells that forms sapwood (xylem) to the inside and inner bark (phloem) to the outside.

4.10 cleaning: Selective pruning to remove one or more of the following parts: dead, diseased, and/ or broken branches (5.6.1).

4.11 climbing spurs: Sharp, pointed devices affixed to a climber's boot used to assist in climbing trees. (syn.: gaffs, hooks, spurs, spikes, climbers)

4.12 closure: The process of woundwood covering a cut or other tree injury.

4.13 crown: The leaves and branches of a tree measured from the lowest branch on the trunk to the top of the tree.

4.14 decay: The degradation of woody tissue caused by microorganisms.

4.15 espalier: The combination of pruning, supporting, and training branches to orient a plant in one plane (5.7.2).

4.16 establishment: The point after planting when a tree's root system has grown sufficiently into the surrounding soil to support shoot growth and anchor the tree.

4.17 facility: A structure or equipment used to deliver or provide protection for the delivery of an essential service, such as electricity or communications.

4.18 final cut: A cut that completes the removal or reduction of a branch or stub.

4.19 frond: A leaf of a palm.

4.20 heading: 1. Cutting a currently growing, or a 1-year-old shoot, back to a bud. 2. Cutting an older branch or stem back to a stub in order to meet a defined structural objective. 3. Cutting an older branch or stem back to a lateral branch not large enough to assume apical dominance in order to meet a defined structural objective. Heading may or may not be an acceptable pruning practice, depending on the application.

4.21 hook-and-blade-type pruning tool: A pruning tool that has a sharp curved blade that overlaps a supporting hook; in contrast to an anvil-type pruning tool (4.1). (syn.: by-pass pruner)

4.22 interfering branches: Crossing, rubbing, or upright branches that have the potential to damage tree structure and/or health.

4.23 internodal cut: A cut located between lateral branches or buds.

4.24 lateral branch: A shoot or stem growing from a parent branch or stem.

4.25 leader: A dominant or co-dominant, upright stem.

4.26 limb: A large, prominent branch.

4.27 lion's tailing: The removal of an excessive number of inner, lateral branches from parent branches. Lion's tailing is not an acceptable pruning practice (5.5.7).

4.28 mechanical pruning: A utility pruning technique where large-scale power equipment is used to cut back branches (5.9.2.2).

4.29 parent branch or stem: A tree trunk, limb, or prominent branch from which shoots or stems grow.

4.30 peeling: For palms: The removal of only the dead frond bases at the point they make contact with the trunk without damaging living trunk tissue. (syn.: shaving)

4.31 petiole: A stalk of a leaf or frond.

4.32 phloem: Inner bark conducting tissues that transport organic substances, primarily carbohydrates, from leaves and stems to other parts of the plant.

4.33 pollarding: The maintenance of a tree by making internodal cuts to reduce the size of a young tree, followed by the annual removal of shoot growth at its point of origin (5.7.3).

4.34 pruning: The selective removal of plant parts to meet specific goals and objectives.

4.35 qualified line-clearance arborist: An individual who, through related training and on-the job experience, is familiar with the equipment and hazards in line clearance and has demonstrated the ability to perform the special techniques involved. This individual may or may not be currently employed by a line clearance contractor.

4.36 qualified line-clearance arborist trainee: An individual undergoing line-clearance training and who, in the course of such training, is familiar with the hazards and equipment involved in line clearance and has demonstrated ability in the performance of the special techniques involved. This individual shall be under the direct supervision of a qualified line-clearance arborist.

4.37 raising: Selective pruning to provide vertical clearance (5.6.3).

4.38 reduction: Selective pruning to decrease height and/or spread (5.6.4).

4.39 remote/rural areas: Locations associated with very little human activity, land improvement, or development.

4.40 restoration: Selective pruning to improve the structure, form, and appearance of trees that have been severely headed, vandalized, or damaged (5.7.4).

4.41 shall: As used in this standard, denotes a mandatory requirement.

4.42 should: As used in this standard, denotes an advisory recommendation.

4.43 stub: An undesirable short length of a branch remaining after a break or incorrect pruning cut is made.

4.44 thinning: Selective pruning to reduce density of live branches (5.6.2).

4.45 throwline: A small, lightweight line with a weighted end used to position a climber's rope in a tree.

4.46 topping: The reduction of a tree's size using heading cuts that shorten limbs or branches back to a predetermined crown limit. Topping is not an acceptable pruning practice (5.5.7).

4.47 tracing: The removal of loose, damaged tissue from in and around the wound.

4.48 urban/residential areas: Locations, such as populated areas including public and private property, that are normally associated with human activity.

4.49 utility: An entity that delivers a public service, such as electricity or communications.

4.50 utility space: The physical area occupied by a utility's facilities and the additional space required to ensure its operation.

4.51 vista pruning: Selective pruning to allow a specific view (5.7.5).

4.52 watersprouts: New stems originating from epicormic buds. (syn.: epicormics shoots)

4.53 wound: An opening that is created when the bark of a live branch or stem is penetrated, cut, or removed.

4.54 woundwood: Partially differentiated tissue responsible for closing wounds. Woundwood develops from callus associated with wounds.

4.55 xylem: Wood tissue. Active xylem is sapwood; inactive xylem is heartwood.

4.56 young tree: A tree young in age or a newly transplanted tree.

5 PRUNING PRACTICES

5.1 Tree inspection

5.1.1 An arborist or arborist trainee shall visually inspect each tree before beginning work.

5.1.2 If a condition is observed requiring attention beyond the original scope of the work, the condition should be reported to an immediate supervisor, the owner, or the person responsible for authorizing the work.

5.2 Tools and equipment

5.2.1 Equipment and work practices that damage living tissue and bark beyond the scope of the work should be avoided.

5.2.2 Climbing spurs shall not be used when climbing and pruning trees.

Exceptions:

-when limbs are more than throwline distance apart and there is no other means of climbing the tree;

-when the bark is thick enough to prevent damage to the cambium;

-in remote or rural utility rights-of-way.

5.3 Pruning cuts

5.3.1 Pruning tools used in making pruning cuts shall be sharp.

5.3.2 A pruning cut that removes a branch at its point of origin shall be made close to the trunk or parent limb, without cutting into the branch bark ridge or collar, or leaving a stub (see Figure 5.3.2).

5.3.3 A pruning cut that reduces the length of a branch or parent stem should bisect the angle between its branch bark ridge and an imaginary line perpendicular to the branch or stem (see Figure 5.3.3).

5.3.4 The final cut shall result in a flat surface with adjacent bark firmly attached.

5.3.5 When removing a dead branch, the final cut shall be made just outside the collar of living tissue.

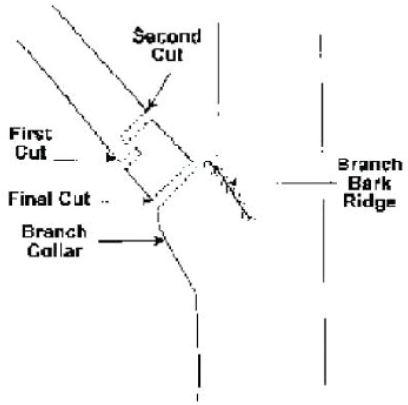


Figure 5.3.2. – A pruning cut that removes a branch at its point of origin shall be made close to the trunk or parent limb, without cutting into the branch bark ridge or collar, or leaving a stub. Branches too large to support with one hand shall be precut to avoid splitting of the wood or tearing of the bark.

5.3.6 Tree branches shall be removed in such a manner so as not to cause damage to other parts of the tree or to other plants or property. Branches too large to support with one hand shall be precut to avoid splitting of the wood or tearing of the bark (see Figure 5.3.2). Where necessary, ropes or other equipment shall be used to lower large branches or portions of branches to the round.

5.3.7 A final cut that removes a branch with a narrow angle of attachment should be made from the outside of the branch to prevent damage to the parent limb (see Figure 5.3.7).

5.3.8 Severed limbs shall be removed from the crown upon completion of the pruning, at times when the tree would be left unattended, or at the end of the workday.

5.4 Wound treatment

5.4.1 Wound treatments should not be used to cover wounds or pruning cuts, except when recommended for disease, insect, mistletoe, or sprout control, or for cosmetic reasons.

5.4.2 Wound treatments that are damaging to tree tissues shall not be used.

5.4.3 When tracing wounds, only loose, damaged tissue should be removed.

5.5 Pruning objectives

5.5.1 Pruning objectives shall be established prior to beginning any pruning operation. To obtain the defined objective, the growth cycles and structure of individual species and the type of pruning to be performed should be considered.

5.5.3 Not more than 25 percent of the foliage should be removed within an annual growing season. The percentage and distribution of foliage to be removed shall be adjusted according to the plant's species, age, health, and site.

5.5.4 Not more than 25 percent of the foliage of a branch or limb should be removed when it is cut back to a lateral. That lateral should be large enough to assume apical dominance.

5.5.5 Pruning cuts should be made in accordance with 5.3 Pruning cuts.

5.5.6 Heading should be considered an acceptable practice for shrub or specialty pruning when needed to reach a defined objective.

5.5.7 Topping and lion's tailing shall be considered unacceptable pruning practices for trees.

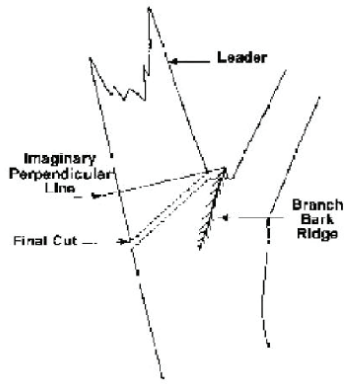


Figure 5.3.3. – A pruning cut that reduces the length of a branch or parent stem should bisect the angle between its branch bark ridge and an imaginary line perpendicular to the branch or stem.

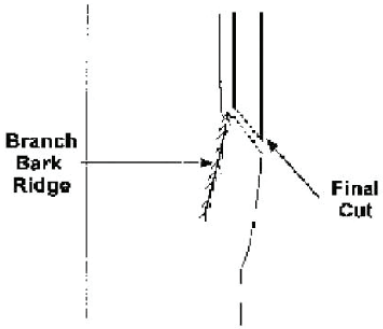


Figure 5.3.7. – A final cut that removes a branch with a narrow angle of attachment should be made from the outside of the branch to prevent damage to the parent limb.

5.6 Pruning types

Specifications for pruning should consist of, but are not limited to, one or more of the following types:

5.6.1 Clean: Cleaning shall consist of selective pruning to remove one or more of the following parts: dead, diseased, and/or broken branches.

5.6.1.1 Location of parts to be removed shall be specified.

5.6.1.2 Size range of parts to be removed shall be specified.

5.6.2 Thin: Thinning shall consist of selective pruning to reduce density of live branches.

5.6.2.1 Thinning should result in an even distribution of branches on individual limbs and throughout the crown.

5.6.2.2 Not more than 25 percent of the crown should be removed within an annual growing season.

5.6.2.3 Location of parts to be removed shall be specified.

5.6.2.4 Percentage of foliage and size range of parts to be removed shall be specified.

5.6.3 Raise: Raising shall consist of selective pruning to provide vertical clearance.

5.6.3.1 Vertical clearance should be specified.

5.6.3.2 Location and size range of parts to be removed should be specified.

5.6.4 Reduce: Reduction shall consist of selective pruning to decrease height and/or spread.

5.6.4.1 Consideration shall be given to the ability of a species to tolerate this type of pruning.

5.6.4.2 Location of parts to be removed and clearance should be specified.

5.6.4.3 Size range of parts should be specified.

5.7 Specialty pruning

Consideration shall be given to the ability of a species to tolerate specialty pruning, using one or more pruning types (5.6).

5.7.1 Young trees

5.7.1.1 The reasons for young tree pruning may include, but are not limited to, reducing risk, maintaining or improving tree health and structure, improving aesthetics, or satisfying a specific need.

5.7.1.2 Young trees that will not tolerate repetitive pruning and have the potential to outgrow their space should be considered for relocation or removal.

5.7.1.3 At planting

5.7.1.3.1 Pruning should be limited to cleaning (5.6.1).

5.7.1.3.2 Branches should be retained on the lower trunk.

5.7.1.4 Once established

5.7.1.4.1 Cleaning should be performed (5.6.1).

5.7.1.4.2 Rubbing and poorly attached branches should be removed.

5.7.1.4.3 A central leader or leader(s) as appropriate should be developed.

5.7.1.4.4 A strong, properly spaced scaffold branch structure should be selected and maintained.

5.7.1.4.5 Interfering branches should be reduced or removed.

5.7.2 Espalier

5.7.2.1 Branches that extend outside the desired plane of growth shall be pruned or tied back.

5.7.2.2 Ties should be replaced as needed to prevent girdling the branches at the attachment site.

5.7.3 Pollarding

5.7.3.1 Consideration shall be given to the ability of the individual tree to respond to pollarding.

5.7.3.2 Management plans shall be made prior to the start of the pollarding process for routine removal of watersprouts.

5.7.3.3 Internodal cuts shall be made at specific locations to start the pollarding process. After the initial cuts are made, no additional internodal cut shall be made.

5.7.3.4 Watersprouts growing from the cut ends of branches (knuckles) should be removed annually during the dormant season.

5.7.4 Restoration

5.7.4.1 Restoration shall consist of selective pruning to improve the structure, form, and appearance of trees that have been severely headed, vandalized, or damaged.

5.7.4.2 Location in tree, size range of parts, and percentage of watersprouts to be removed should be specified.

5.7.5 Vista pruning

5.7.5.1 Vista pruning shall consist of selective pruning to allow a specific view.

5.7.5.2 Size range of parts, location in tree, and percentage of foliage to be removed should be specified.

5.8 Palm pruning

5.8.1 Palm pruning should be performed when fronds, fruit, or loose petioles may create a dangerous condition.

5.8.2 Live healthy fronds, initiating at an angle of 45 degrees or greater from horizontal, with frond tips at or below horizontal, should not be removed.

5.8.3 Fronds removed should be severed close to the petiole base without damaging living trunk tissue.

5.8.4 Palm peeling (shaving) should consist of the removal of only the dead frond bases at the point they make contact with the trunk without damaging living trunk tissue.

5.9 Utility pruning

5.9.1 General

5.9.1.1 The purpose of utility pruning is to prevent the loss of service, comply with mandated clearance laws, prevent damage to equipment, avoid access impairment, and uphold the intended usage of the facility/utility space.

5.9.1.2 Only a qualified line clearance arborist or line clearance arborist trainee shall be assigned to line clearance work in accordance with ANSI Z133.1, 29 CFR 1910.331 – 335, 29 CFR 1910.268 or 29 CFR 910.269.

5.9.1.3 Utility pruning operations are exempt from requirements in 5.1 Tree Inspection:

5.1.1 An arborist or arborist trainee shall visually inspect each tree before beginning work.

5.1.2 If a condition is observed requiring attention beyond the original scope of the work, the condition should be reported to an immediate supervisor, the owner, or the person responsible for authorizing the work.

5.9.1.4 Safety inspections of the work area are required as outlined in ANSI Z133.1 4.1.3, job briefing.

5.9.2 Utility crown reduction pruning

5.9.2.1 Urban/residential environment

5.9.2.1.1 Pruning cuts should be made in accordance with 5.3, Pruning cuts. The following requirements and recommendations of 5.9.2.1.1 are repeated from 5.3 Pruning cuts.

5.9.2.1.1.1 A pruning cut that removes a branch at its point of origin shall be made close to the trunk or parent limb, without cutting into the branch bark ridge or collar, or leaving a stub (see Figure 5.3.2).

5.9.2.1.1.2 A pruning cut that reduces the length of a branch or parent stem should bisect the angle between its branch bark ridge and an imaginary line perpendicular to the branch or stem (see Figure 5.3.3).

5.9.2.1.1.3 The final cut shall result in a flat surface with adjacent bark firmly attached.

5.9.2.1.1.4 When removing a dead branch, the final cut shall be made just outside the collar of living tissue.

5.9.2.1.1.5 Tree branches shall be removed in such a manner so as not to cause damage to other parts of the tree or to other plants or property. Branches too large to support with one hand shall be precut to avoid splitting of the wood or tearing of the bark (see Figure 5.3.2). Where necessary, ropes or other equipment shall be used to lower large branches or portions of branches to the ground.

5.9.2.1.1.6 A final cut that removes a branch with a narrow angle of attachment should be made from the bottom of the branch to prevent damage to the parent limb (see Figure 5.3.7).

5.9.2.1.2 A minimum number of pruning cuts should be made to accomplish the purpose of facility/utility pruning. The natural structure of the tree should be considered.

5.9.2.1.3 Trees directly under and growing into facility/utility spaces should be removed or pruned. Such pruning should be done by removing entire branches or by removing branches that have laterals growing into (or once pruned, will grow into) the facility/utility space.

5.9.2.1.4 Trees growing next to, and into or toward facility/utility spaces should be pruned by reducing branches to laterals (5.3.3) to direct growth away from the utility space or by removing entire branches. Branches that, when cut, will produce watersprouts that would grow into facilities and/or utility space should be removed.

5.9.2.1.5 Branches should be cut to laterals or the parent branch and not at a pre-established clearing limit. If clearance limits are established, pruning cuts should be made at laterals or parent branches outside the specified clearance zone.

5.9.2.2 Rural/remote locations – mechanical pruning Cuts should be made close to the main stem, outside of the branch bark ridge and branch collar. Precautions should be taken to avoid stripping or tearing of bark or excessive wounding.

5.9.3 Emergency service restoration
During a utility-declared emergency, service must be restored as quickly as possible in accordance with ANSI Z133.1, 29 CFR 1910.331 – 335, 29 CFR 1910.268, or 29 CFR 1910.269. At such times it may be necessary, because of safety and the urgency of service restoration, to deviate from the use of proper pruning techniques as defined in this standard. Following the emergency, corrective pruning should be done as necessary.

ANNEX A (INFORMATIVE)

Reference publications

International Society of Arboriculture (ISA). 1995. Tree Pruning Guidelines. Savoy, IL: International Society of Arboriculture (ISA).