

City of Carpinteria

Special Conditions Street Tree Management Plan

Adopted July 12, 2021



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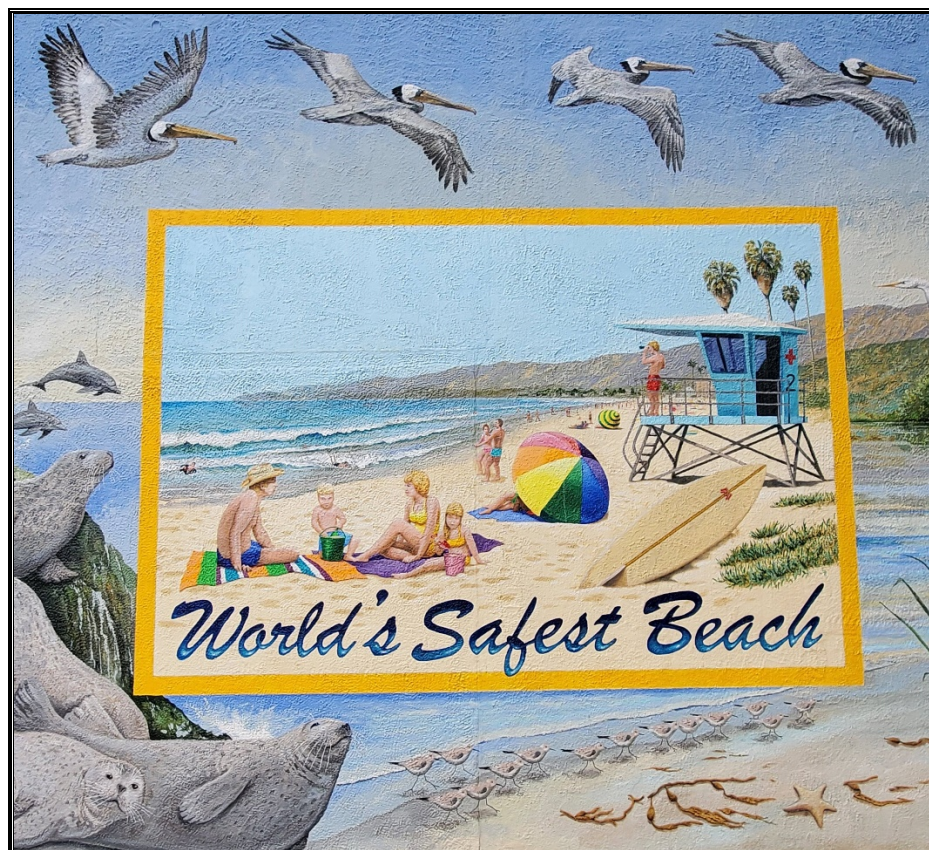


Executive Summary

In March 2020, the City of Carpinteria (City) requested a proposal from West Coast Arborists, Inc. (WCA) to update the Street Tree Management Plan (STMP) that had served as the guiding urban forestry document since WCA completed that plan in January 2010. WCA began working on this updated STMP in the summer of 2020.

The work plan item was to update the STMP by including the elements of the Tree Inspection and Maintenance Policy template by the California Joint Powers Insurance Authority. As part of updating the ten-year-old document, the City requested that the Special Conditions section of the old document be removed and made into its own separate document. These newly updated documents are a result of the collaboration between the Carpinteria community, City, and WCA.

The previous STMP of 2010 included text for special condition areas of the city. In this update of the STMP, the City requested that the special conditions streets have their own document for policy and tree maintenance decisions due to the nature of the streets, the size and condition of the trees, and the City infrastructure around them.





Section 1

Introduction

The Special Conditions Street Tree Management Plan (SCSTMP) has a stated purpose of providing guidance on maintenance decisions for the specified streets and species of trees.

| Street | Tree Species |
|--------------------|--------------|
| Arbol Verde Street | Shamel Ash |
| Calle Rey Mar | Shamel Ash |
| Camino Trillado | Shamel Ash |
| Carpinteria Avenue | Stone Pine |
| Dariesa Street | Carrot Wood |
| La Manida Street | Shamel Ash |
| Linden Avenue | Tipus |
| Ogan Road | Carrot Wood |
| Seventh Street | Stone Pine |

Objective and Goals

The objectives of the SCSTMP are to effectively manage street trees, to reduce the exposure of liability associated with street trees, and to allow collaboration with neighborhoods to addresses tree preservation needs. This plan is consistent with the General Plan and Local Coastal Plan's Open Space, Recreation & Conservation Element, as well as the Carpinteria Municipal Code Chapter 12.28.

As a guiding document:

1. The SCSTMP is to be a separate document from the STMP, but an extension of it. The STMP planting details, community outreach, municipal ordinance section, and the City tree inspection policy also apply to this SCSTMP, though are not formally copied herein.
2. Staff are to perform public outreach by allowing the Tree Advisory Board (TAB) review and comment, taking into consideration its recommendations as a board.
3. The SCSTMP is to be used by the TAB as a guiding document when providing tree maintenance suggestions.



The goals from the 2010 Plan are applicable as well:

1. Practice uniform streetscape planting and maintenance. All applicable American National Standards for Tree Care Operations apply, including the (Part 8) Root Management standard.
2. Promote a good quality of life and a healthy urban forest through diversification of tree species.
3. Ensure each valid vacant site in the City is planted with an approved tree.
4. A replacement tree species list (palette) is referenced for planning purposes.
5. The tree inventory will serve as the main source of information on recommended tree maintenance.

Protocol

These streets have mature trees which require particular attention due to such factors as hardscape and utility conflicts, setbacks, and road width. The City wishes to grow the urban forest canopy through well-maintained street trees that have been thoroughly inspected and assessed by certified personnel. By following the protocol below the City may provide consistent services in these special condition areas.

- The City will post or send neighborhood notices fifteen days prior to notify residents of community discussion to be held regarding tree maintenance strategy based on findings from competent, International Society of Arboriculture (ISA) certified professionals.
- The City will conduct a neighborhood/community meeting regarding the street tree recommendations based on feedback received.
- Following the neighborhood meeting the TAB will meet to provide recommendations for tree concerns.
- The TAB will present recommendations to Staff for City Council consideration and approval.
- Once staff has received approval, refer to the following sections for specific guidance on choosing species, developing a planting plan, best management practices, and continued maintenance.
- The concepts and practices described in this Plan are applicable to non-special conditions streets as well.



Section 2

Special Conditions Species Palette

The City special conditions species palette is composed of trees that are selected for four sizes of parkway or right-of way-settings. For the purposes of this Special Conditions Street Tree Management Plan, parkway may be defined as growing space, the minimum dimension of available planting space at an address. Parkway may take the form of the space between curb and sidewalk, the cut or formed tree wells, or the space behind monolithic curbs and sidewalks.

The 2'+ parkway setting consists of eleven species of trees, three which are deciduous, and all that are slower growing and generally smaller than others at maturity. The 3'+ parkways category has fifteen trees that vary from fully or partly deciduous to evergreen. The 5'+ and 8'+ parkway sizes host the most species in the palette with twenty-five and eight species, respectively.

Most of the species in the palette are commonly grown in the nursery trade and are generally available for immediate purchase and planting. In a few cases the trees are not readily available and may require pre-planning to be contract grown, but they would work well in this climate and in that growing space.

This Special Conditions palette is the same as the Street Tree Management Plan palette. Please refer to that Plan for pages with images of these trees.



| Parkway | Botanical Name | Common Name | Height in Ft. | Spread in Ft. | Type |
|---------|--|------------------------|---------------|---------------|----------------|
| 2'+ | <i>Arbutus 'Marina'</i> | Marina Strawberry Tree | 40 | 40 | Evergreen |
| 2'+ | <i>Callistemon citrinus</i> | Lemon Bottlebrush | 25 | 20 | Evergreen |
| 2'+ | <i>Cercis canadensis 'Forest Pansy'</i> | Forest Pansy Redbud | 20 | 20 | Deciduous |
| 2'+ | <i>Cercis canadensis 'Oklahoma'</i> | Oklahoma Redbud | 20 | 20 | Deciduous |
| 2'+ | <i>Chionanthus retusus</i> | Chinese Fringe Tree | 20 | 15 | Deciduous |
| 2'+ | <i>Heteromeles arbutifolia</i> | Toyon | 25 | 20 | Evergreen |
| 2'+ | <i>Ilex altaclarensis 'Wilsonii'</i> | Wilson Holly | 20 | 12 | Evergreen |
| 2'+ | <i>Photinia fraseri</i> | Fraser Photinia | 15 | 10 | Evergreen |
| 2'+ | <i>Syagrus romanzoffianum</i> | Queen Palm | 50 | 25 | Evergreen |
| 2'+ | <i>Trachycarpus fortunei</i> | Windmill palm | 30 | 10 | Evergreen |
| 2'+ | <i>Tristaniaopsis laurina</i> | Water Gum | 15 | 10 | Evergreen |
| 3'+ | <i>Bauhinia blakeana</i> | Hong Kong Orchid Tree | 20 | 20 | Semi-deciduous |
| 3'+ | <i>Cercis canadensis</i> | Eastern Redbud | 35 | 30 | Deciduous |
| 3'+ | <i>Cercis canadensis 'Alba'</i> | White Redbud | 20 | 20 | Deciduous |
| 3'+ | <i>Chitalpa tashkentensis</i> | Chitalpa | 30 | 30 | Deciduous |
| 3'+ | <i>Hymenosporum flavum</i> | Sweetshade | 40 | 30 | Evergreen |
| 3'+ | <i>Livistona chinensis</i> | Chinese Fountain Palm | 40 | 8 | Evergreen |
| 3'+ | <i>Magnolia grandiflora 'Little Gem'</i> | Little Gem Magnolia | 25 | 15 | Evergreen |
| 3'+ | <i>Magnolia grandiflora 'Russet'</i> | Russet Magnolia | 50 | 20 | Evergreen |
| 3'+ | <i>Magnolia grandiflora 'Saint Mary'</i> | Saint Mary Magnolia | 20 | 20 | Evergreen |
| 3'+ | <i>Pittosporum phillyraeoides</i> | Willow Pittosporum | 35 | 15 | Evergreen |
| 3'+ | <i>Podocarpus henkellii</i> | Long-leaved Yellowwood | 35 | 15 | Evergreen |
| 3'+ | <i>Pyrus calleryana</i> | Ornamental Pear | 50 | 50 | Deciduous |
| 3'+ | <i>Pyrus calleryana 'Aristocrat'</i> | Aristocrat Pear | 40 | 20 | Deciduous |
| 3'+ | <i>Pyrus calleryana 'Redspire'</i> | Redspire Pear | 35 | 20 | Deciduous |
| 3'+ | <i>Pyrus kawakamii</i> | Evergreen Pear | 30 | 30 | Deciduous |



| Parkway | Botanical Name | Common Name | Height in Ft. | Spread in Ft. | Type |
|---------|---|-----------------------------------|---------------|---------------|----------------|
| 5'+ | <i>Agonis flexuosa</i> 'Jervis Bay Afterdark' | After Dark Peppermint Tree | 30 | 30 | Evergreen |
| 5'+ | <i>Callistemon viminalis</i> | Weeping Bottlebrush | 30 | 15 | Evergreen |
| 5'+ | <i>Cassia leptophylla</i> | Gold Medallion Tree | 25 | 30 | Evergreen |
| 5'+ | <i>Eucalyptus deglupta</i> | Rainbow Eucalyptus | 80 | 30 | Evergreen |
| 5'+ | <i>Eucalyptus nicholii</i> | Nichol's Willow-leaved Peppermint | 45 | 35 | Evergreen |
| 5'+ | <i>Fraxinus oxycarpa</i> 'Raywood' | Raywood Ash | 35 | 25 | Deciduous |
| 5'+ | <i>Geijera parviflora</i> | Australian Willow | 30 | 20 | Evergreen |
| 5'+ | <i>Ginkgo biloba</i> 'Autumn Gold' | Autumn Gold Ginkgo | 30 | 20 | Deciduous |
| 5'+ | <i>Ginkgo biloba</i> 'Princeton Sentry' | Princeton Sentry Ginkgo | 50 | 20 | Deciduous |
| 5'+ | <i>Ginkgo biloba</i> 'Saratoga' | Saratoga Ginkgo | 40 | 30 | Deciduous |
| 5'+ | <i>Handroanthus impetiginosus</i> | Lavender Trumpet Tree | 40 | 40 | Semi-deciduous |
| 5'+ | <i>Jacaranda mimosifolia</i> | Jacaranda | 40 | 30 | Semi-deciduous |
| 5'+ | <i>Koelreuteria paniculata</i> | Goldenrain Tree | 35 | 40 | Deciduous |
| 5'+ | <i>Magnolia grandiflora</i> 'Samuel Sommer' | Samuel Sommer Magnolia | 30 | 30 | Evergreen |
| 5'+ | <i>Markhamia lutea</i> | Gold Markhamia | 30 | 20 | Evergreen |
| 5'+ | <i>Melaleuca linarifolia</i> | Flaxleaf Paperbark | 30 | 25 | Evergreen |
| 5'+ | <i>Melaleuca quinquenervia</i> | Cajeput Tree | 40 | 25 | Evergreen |
| 5'+ | <i>Olea europaea</i> 'Swan Hill' | Swan Hill Olive | 25 | 25 | Evergreen |
| 5'+ | <i>Pinus eldarica</i> | Afghan Pine | 80 | 25 | Evergreen |
| 5'+ | <i>Pistacia chinensis</i> | Chinese Pistache | 60 | 50 | Deciduous |
| 5'+ | <i>Quercus tomentella</i> | Island Oak | 50 | 30 | Evergreen |
| 5'+ | <i>Stenocarpus sinuatus</i> | Firewheel Tree | 40 | 25 | Evergreen |
| 5'+ | <i>Styphnolobium japonicum</i> | Japanese Pagoda Tree | 50 | 50 | Deciduous |
| 5'+ | <i>Ulmus parvifolia</i> 'Drake' | Drake Elm | 50 | 60 | Deciduous |
| 5'+ | <i>Ulmus parvifolia</i> 'True Green' | True Green Elm | 50 | 60 | Deciduous |
| 8'+ | <i>Afrocarpus gracilior</i> | African Fern Pine | 60 | 40 | Evergreen |
| 8'+ | <i>Koelreuteria bipinnata</i> | Chinese Flame Tree | 40 | 40 | Deciduous |
| 8'+ | <i>Liquidambar styraciflua</i> 'Rotundiloba' | Rotundiloba Sweetgum | 60 | 25 | Deciduous |
| 8'+ | <i>Lophostemon confertus</i> | Brisbane Box | 45 | 25 | Evergreen |
| 8' + | <i>Platanus x hispanica</i> 'Bloodgood' | Bloodgood Plane Tree | 80 | 40 | Deciduous |
| 8'+ | <i>Platanus x hispanica</i> 'Yarwood' | Yarwood Plane Tree | 60 | 40 | Deciduous |
| 8'+ | <i>Quercus agrifolia</i> | Coast Live Oak | 70 | 80 | Evergreen |
| 8'+ | <i>Quercus virginiana</i> | Southern Live Oak | 60 | 100 | Evergreen |



Section 3

Street Tree Planting Plan

The tree species in this street tree planting plan were selected in consultation with the City. They were classified in the species palette (Section 2) according to their suitability for a particular parkway size (growing space), their growing space needs, and their foliage type.

Assigning a tree species that is appropriate for the growing space width and available overhead space is the best way to control future infrastructure costs. This plan includes a column answering yes/no whether the tree should be planted under utility lines. City staff may choose from several trees which fit the situation where the vacant tree planting site is located.

To serve the community well, trees should be long-lived and aesthetically pleasing at maturity, preferably less susceptible to many common insects and diseases, and do as little infrastructure damage as possible. These factors were taken into consideration to provide a tree which is both appropriate for the zone and require minimum maintenance over time.

This planting plan serves as a baseline for future tree planting projects. The TAB may be consulted through its regular meetings about the City tree planting plan and can provide recommendations or suggest substitution of approved species, where appropriate.

The City has developed outreach material for planting program notification, see Section 8 of this Street Tree Management Plan. Consult the tree inventory to create a list of vacant planting sites to install trees in the formation of a planting program.

Upon City approval of new tree planting, community outreach letters are sent by Staff to the homeowners regarding the planting operation. On the letter is a web address to view this Street Tree Management Plan and the sample images of tree species. The resident has two weeks to respond via the postcard provided on whether they would like to receive the tree in their parkway or not. Approximately three weeks after the letters are mailed the planting operation begins and all locations without a “no” response will receive a newly planted tree. The tree inventory is then updated, and educational tree care door hangers are distributed at the applicable locations for proper care.



| | | | Utility |
|---------|--|------------------------|---------|
| Parkway | Botanical Name | Common Name | Tree |
| 2'+ | <i>Arbutus 'Marina'</i> | Marina Strawberry Tree | Yes |
| 2'+ | <i>Callistemon citrinus</i> | Lemon Bottlebrush | Yes |
| 2'+ | <i>Cercis canadensis 'Forest Pansy'</i> | Forest Pansy Redbud | Yes |
| 2'+ | <i>Cercis canadensis 'Oklahoma'</i> | Oklahoma Redbud | Yes |
| 2'+ | <i>Chionanthus retusus</i> | Chinese Fringe Tree | Yes |
| 2'+ | <i>Heteromeles arbutifolia</i> | Toyon | Yes |
| 2'+ | <i>Ilex altaclarensis 'Wilsonii'</i> | Wilson Holly | Yes |
| 2'+ | <i>Photinia fraseri</i> | Fraser Photinia | Yes |
| 2'+ | <i>Syagrus romanzoffianum</i> | Queen Palm | No |
| 2'+ | <i>Trachycarpus fortunei</i> | Windmill palm | Yes |
| 2'+ | <i>Tristanopsis laurina</i> | Water Gum | Yes |
| 3'+ | <i>Bauhinia blakeana</i> | Hong Kong Orchid Tree | Yes |
| 3'+ | <i>Cercis canadensis</i> | Eastern Redbud | Yes |
| 3'+ | <i>Cercis canadensis 'Alba'</i> | White Redbud | Yes |
| 3'+ | <i>Chitalpa tashkentensis</i> | Chitalpa | Yes |
| 3'+ | <i>Hymenosporum flavum</i> | Sweetshade | Yes |
| 3'+ | <i>Livistona chinensis</i> | Chinese Fountain Palm | No |
| 3'+ | <i>Magnolia grandiflora 'Little Gem'</i> | Little Gem Magnolia | Yes |
| 3'+ | <i>Magnolia grandiflora 'Russet'</i> | Russet Magnolia | Yes |
| 3'+ | <i>Magnolia grandiflora 'Saint Mary'</i> | Saint Mary Magnolia | Yes |
| 3'+ | <i>Pittosporum phillyraeoides</i> | Willow Pittosporum | Yes |
| 3'+ | <i>Podocarpus henkellii</i> | Long-leafed Yellowwood | Yes |
| 3'+ | <i>Pyrus calleryana</i> | Ornamental Pear | Yes |
| 3'+ | <i>Pyrus calleryana 'Aristocrat'</i> | Aristocrat Pear | Yes |
| 3'+ | <i>Pyrus calleryana 'Redspire'</i> | Redspire Pear | Yes |
| 3'+ | <i>Pyrus kawakamii</i> | Evergreen Pear | No |



| Parkway | Botanical Name | Common Name | Utility Tree |
|---------|---|-----------------------------------|--------------|
| 5'+ | <i>Agonis flexuosa</i> 'Jervis Bay Afterdark' | After Dark Peppermint Tree | Yes |
| 5'+ | <i>Callistemon viminalis</i> | Weeping Bottlebrush | Yes |
| 5'+ | <i>Cassia leptophylla</i> | Gold Medallion Tree | Yes |
| 5'+ | <i>Eucalyptus deglupta</i> | Rainbow Eucalyptus | No |
| 5'+ | <i>Eucalyptus nicholii</i> | Nichol's Willow-leaved Peppermint | No |
| 5'+ | <i>Fraxinus oxycarpa</i> 'Raywood' | Raywood Ash | Yes |
| 5'+ | <i>Geijera parviflora</i> | Australian Willow | Yes |
| 5'+ | <i>Ginkgo biloba</i> 'Autumn Gold' | Autumn Gold Ginkgo | No |
| 5'+ | <i>Ginkgo biloba</i> 'Princeton Sentry' | Princeton Sentry Ginkgo | No |
| 5'+ | <i>Ginkgo biloba</i> 'Saratoga' | Saratoga Ginkgo | No |
| 5'+ | <i>Handroanthus impetiginosus</i> | Lavender Trumpet Tree | No |
| 5'+ | <i>Jacaranda mimosifolia</i> | Jacaranda | No |
| 5'+ | <i>Koelreuteria paniculata</i> | Goldenrain Tree | No |
| 5'+ | <i>Magnolia grandiflora</i> 'Samuel Sommer' | Samuel Sommer Magnolia | Yes |
| 5'+ | <i>Markhamia lutea</i> | Gold Markhamia | Yes |
| 5'+ | <i>Melaleuca linarifolia</i> | Flaxleaf Paperbark | No |
| 5'+ | <i>Melaleuca quinquenervia</i> | Cajeput Tree | No |
| 5'+ | <i>Olea europaea</i> 'Swan Hill' | Swan Hill Olive | Yes |
| 5'+ | <i>Pinus eldarica</i> | Afghan Pine | No |
| 5'+ | <i>Pistacia chinensis</i> | Chinese Pistache | No |
| 5'+ | <i>Quercus tomentella</i> | Island Oak | No |
| 5'+ | <i>Stenocarpus sinuatus</i> | Firewheel Tree | Yes |
| 5'+ | <i>Styphnolobium japonicum</i> | Japanese Pagoda Tree | No |
| 5'+ | <i>Ulmus parvifolia</i> 'Drake' | Drake Elm | No |
| 5'+ | <i>Ulmus parvifolia</i> 'True Green' | True Green Elm | No |
| 8'+ | <i>Afrocarpus gracilior</i> | African Fern Pine | No |
| 8'+ | <i>Koelreuteria bipinnata</i> | Chinese Flame Tree | No |
| 8'+ | <i>Liquidambar styraciflua</i> 'Rotundiloba' | Rotundiloba Sweetgum | No |
| 8'+ | <i>Lophostemon confertus</i> | Brisbane Box | No |
| 8' + | <i>Platanus x hispanica</i> 'Bloodgood' | Bloodgood Plane Tree | No |
| 8'+ | <i>Platanus x hispanica</i> 'Yarwood' | Yarwood Plane Tree | No |
| 8'+ | <i>Quercus agrifolia</i> | Coast Live Oak | No |
| 8'+ | <i>Quercus virginiana</i> | Southern Live Oak | No |

Section 4

Root Management

The established trees on the streets covered by this SCSTMP may require certain techniques and tree care practices to ensure their preservation and to provide benefits to the public in the long-term. A goal of the City is to reduce infrastructure conflicts while preserving the trees and aesthetics of the community. To ensure public safety is enhanced through the City's maintenance decisions, it is recommended that the City consider the following tree-based, infrastructure based, and soil-based strategies.

Tree-based Strategies

The first strategy covered in this section is species replacement. A common problem related to infrastructure damage is having the wrong tree in the wrong place. A tree that will outgrow the space provided for its roots and canopy will ultimately conflict with existing infrastructure. To prevent further conflicts in the future, as trees require removal for approved reasons, the objective is to replace species causing damage to infrastructure with a lower potential to do so. Select species based on the species palette and planting plan.

A second, last resort strategy would be to prune roots that are causing damage without compromising its longevity and potentially destabilizing the tree. This may require the removal of hardscape elements, as well as performing root crown excavations, to determine which roots can be pruned and which could not to meet this criteria. Root pruning is an injurious practice that should be done only under the supervision of an ISA Certified Arborist.

Infrastructure-based Strategies

There are many strategies to minimize infrastructure conflicts with trees. Infrastructure-based strategies vary based on the objective in a situation, the City's hardscape preferences for public works projects, capital improvement budgets, and applicable public access codes. The strategies themselves can be further grouped by the type of practice involved.

One strategy would be to increase the size of the planting space, thereby removing existing sidewalk, so long as ADA standards are met, and the right-of way can accommodate the planter area expansion. This preserves the tree while providing a continuous paved surface for the public.

A second strategy would be to modify the hardscape from the original paved condition. This might include curving the sidewalk, building curb pop-outs, making the street narrower where needed, bridging pavement over surface roots, using permeable paving and reinforced or thicker slabs where they typically are not used, or modifying expansion joints to reduce the potential for differential lifting. In each case the cost and feasibility of these methods should be considered.

A third strategy for infrastructure-based work would be to change to a different type of material, including rubber sidewalks, installation of ramps or wedges as a temporary measure, using pavers that can be replaced or reset instead of finished paving, or paver modules that are larger than individual pavers and are interconnected. Some products on the market may prove useful for reducing conflicts but still need additional field testing. When using such products, the City should regularly inspect them to ensure the products works as intended and decide on its practicality for future projects.

Soil-based Strategies

A final strategy for reducing conflicts with pavement is to use root barrier products. The products are intended to block and redirect roots away from infrastructure elements. Their effectiveness largely depends upon the installation technique (linear fashion vs. circular pattern) and the type of tree adjacent to the product. Barriers that are not placed high enough may allow roots to grow over them, thereby rendering the installation ineffective. If installed too high they could become a trip hazard. Coincidentally, barriers that are too short will allow roots to grow under and around, and not provide adequate protection from upward growing roots. Installation of root barriers near established trees will almost certainly involve cutting existing roots, and so could be rightly seen as part of a root pruning operation. This strategy is best employed on newly planted trees as opposed to established trees.

Managing Trees During Construction

Preservation of City trees requires knowledge of their current condition, an understanding of the possible improvement projects that could affect their growth, the practices that enhance tree health to make them more resistant to changes in their environment.

For projects where new construction or site redevelopment are planned that could affect City special condition streets, the City should consult with an ISA Certified Arborist to obtain a report and recommendations on affected street trees. The ISA publication titled *Best Management Practices – Managing Trees During Construction* is a guiding resource for tree protection practices and is a companion to the ANSI A300 (Part 5) standard. These documents are useful from the pre-construction through post-construction process to ensure tree health during these intensive projects.

