



Appendices

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**Department of Public Works
Department of Planning and Development Services**

Appendix A: Local Streets – Geometric Criteria

STREET CLASSIFICATION	ALLEY	NEIGHBORHOOD COLLECTOR	LOCAL STREET
Function	Not intended for through traffic, utility and service corridor.	Inter-neighborhood streets connecting two or more neighborhoods and providing inter-residential travel. (Streets providing local access for business, commercial, industrial, and multifamily uses.)	Neighborhood streets, low traffic volumes.
Access	Access to abutting properties.	Access limited to abutting lots not fronting on residential streets.	As main function, access to abutting properties.
ADT	Under 200	400 to 4,000	100 - 399
Design Speed(mph) (1)	5 mph over posted speed limit	5 mph over posted speed limit	5 mph over posted speed limit
Min. Radius (ft.)	See Table 2.1 Engineering Development Guide	See Table 2.1 Engineering Development Guide	See Table 2.1 Engineering Development Guide
Max. Grade (%) (2) Flat (0 – 8%) Rolling (9 – 15%) Steep (15% or greater)	See AASHTO Geometric Design of Streets and Highways 2004	See AASHTO Geometric Design of Streets and Highways 2004	See AASHTO Geometric Design of Streets and Highways 2004
Required Minimum Right-of-Way (ft.) (3)	20	60	60
Min. Pavement Width (ft.) (3)	16	28	24
Type of Curb	N/A	Type A	Type A
Max. Superelevation	See Table 2.1 Engineering Development Guide	See Table 2.1 Engineering Development Guide	See Table 2.1 Engineering Development Guide

NOTES:

1. Design speed is a basis for determining geometric elements not herein specified.
2. Max. grade may be exceeded for short distances provided no practical alternative exists and subject to approval by the Engineer.
3. Additional right-of-way and pavement width may be required subject to traffic study or analysis approved by the Director of Public Works.

Appendix B: Arterial Streets – Geometric Criteria

STREET CLASSIFICATION	PRINCIPAL	MINOR	COLLECTOR
Function	Inter-community highways connecting larger community centers and facilities.	Intra-community highways connecting community centers and facilities.	Intra-community highways connecting residential neighborhoods with community centers and facilities.
Access	Partially Controlled	Partially Controlled	Partially Controlled
ADT (X1,000)	20+	8-30	3-9
Design Speed (mph) (1)	5 mph over posted speed limit	5 mph over posted speed limit	5 mph over posted speed limit
Min. Radius (ft.)	See Table 2.1 Engineering Development Guide	See Table 2.1 Engineering Development Guide	See Table 2.1 Engineering Development Guide
Max. Grade (%) (2) Flat (0 – 8%) Rolling (9 – 15%) Steep (15% and greater)	See AASHTO Geometric Design of Streets and Highways 2004	See AASHTO Geometric Design of Streets and Highways 2004	See AASHTO Geometric Design of Streets and Highways 2004
Required Min. Right-of-Way (ft.) (3) 3 Lane 4 Lane 5 Lane 7 Lane	60 70 82 110	60 70 82	60 70 82
Pavement Width (ft.) (3)	See Table 2.4 Engineering Development Guide	See Table 2.4 Engineering Development Guide	See Table 2.4 Engineering Development Guide
Type of Curb	Type A	Type A	Type A
Max. Superelevation	See Table 2.1 Engineering Development Guide	See Table 2.1 Engineering Development Guide	See Table 2.1 Engineering Development Guide

NOTES:

1. Design speed is a basis for determining geometric elements not herein specified and does not imply posted or legally permissible speed.
2. Max. grade may be exceeded for short distances provided no practical alternative exists and subject to approval by the Engineer.
3. Additional right-of-way and pavement width may be required subject to traffic study or analysis approved by the Director of Public Works.
4. See Table 2.4 for Arterial Lane Widths



Appendix C
Street Trees

Department of Public Works
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RECOMMENDED STREET TREE PLANTING SCHEDULE - Shoreline, WA.

**Small Trees: 15' to 25' Height. Appropriate under lower power lines.
Good for standard 4' amenity zones.**

Botanical Name Common Name	Height in feet	Spread in feet	Flowers	Fall Color	Comments/Notes
<i>Acer ginnala</i> 'Flame' Amur Maple	20	20		red	Select for single stem; can be multi-trunked.
<i>Acer grandidentatum</i> 'Schmidt' Rocky Mt. Glow Maple	25	15		yellow to red	Intense Fall color.
<i>Acer griseum</i> Paperbark Maple	25	20		red	Smooth, peeling, cinnamon colored bark.
<i>Acer palmatum</i> Japanese Maple	20	24	small red	yellow, orange, red	Hundreds of varied cultivars. Can be slow growing.
<i>Acer platanoides</i> 'Globosum' Globe Norway Maple	15	18		yellow	Rounded top, aka lollipop top, and compact growth.
<i>Amelanchier x grandiflora</i> 'Princess Diana' Serviceberry	25	20	white	bright red	Good for limited space. Select for single stem.
<i>Amelanchier x grandiflora</i> 'Autumn Brilliance' Serviceberry	20	15	white	bright red	Reliable bloom. Light grey bark.
<i>Cercis canadensis</i> Eastern Redbud	25	30	pink	yellow	Blooms before leaves are out.
<i>Cornus kousa</i> 'Chinensis' Chinese Kousa Dogwood	20	20	white	reddish to scarlet	Most resistant to diseases of dogwood, drought resistant.
<i>Fraxinus pennsylvanica</i> 'Johnson' Leprechaun Ash	18	16		yellow	A miniature in every way.
<i>Magnolia x loebneri</i>	20	20	white	yellow	Single stem cultivars with mature height of 20'.
<i>Oxydendrum arboreum</i> Sourwood	20	15	white	orange, scarlet	Slow growing.

RECOMMENDED STREET TREE PLANTING SCHEDULE - Shoreline, WA.

Medium Trees: 26' to 49' Height. Not appropriate under lower power lines. Good for standard 4' or larger amenity zones (wider amenity zones recommended where space allows).

Botanical Name Common Name	Height in feet	Spread in feet	Flowers	Fall Color	Comments/Notes
<i>Acer campestre</i> 'Evelyn' Queen Elizabeth Maple	35	30		yellow	More upright branching than the species.
<i>Acer platanoides</i> 'Columnar' Columnar Norway Maple	35	15		yellow	Narrow & upright.
<i>Acer platanoides</i> 'Parkway' Parkway Maple	40	25	yellow	yellow	
<i>Acer pseudoplatanus</i> 'Atropurpureum' Spaethii Maple	40	30		not significant	Leaves green on top, purple underneath.
<i>Acer rubrum</i> 'Bowhall' Bowhall Maple	40	15		yellow orange	Narrow & tightly formed.
<i>Acer rubrum</i> 'Karpick' Karpick Maple	40	20		yellow to red	May work under very high power lines with arborist's approval.
<i>Acer rubrum</i> 'Scarsen' Scarlet Sentinel Maple	40	20		yellow orange	
<i>Acer truncatum x A. platanoides</i> 'Keithsform' Norwegian Sunset Maple	35	25	yellow	yellow-orange/red	
<i>Acer truncatum x A. platanoides</i> 'Warren Red' Pacific Sunset Maple	30	25	yellow	yellow-orange/red	Early Fall color.
<i>Aesculus x carnea</i> 'Briottii' Red Horsechestnut	30	35	large 10" red clusters	no	Smaller & resists heat and drought better than other horse chestnuts.
<i>Betula jacquemontii</i> Jacquemontii Birch	40	30		yellow	White bark makes for good winter interest.
<i>Carpinus betulus</i> 'Columnar' Columnar European Hornbeam	40	20		yellow	
<i>Carpinus betulus</i> 'Fastigiata' Pyramidal European Hornbeam	35	25		yellow	Symmetrical, heat & drought resistant.
<i>Fagus sylvatica</i> 'Dawyck Purple' Dawyck Purple Beech	40	12		no	Purple foliage, branches erect & close together.
<i>Fraxinus americana</i> 'Autumn Applause' Ash	40	25		purple	
<i>Fraxinus pennsylvanica</i> 'Patmore' Patmore Ash	45	35		yellow	Extremely hardy, may be seedless.
<i>Ginkgo biloba</i> 'Autumn Gold' Autumn Gold Ginkgo	45	35		yellow	
<i>Ginkgo biloba</i> 'Princeton Sentry' Princeton Sentry Ginkgo	40	15		yellow	Very narrow growth.

<i>Gleditsia triacanthos</i> Shademaster Honeylocust	45	35	not noticeable	yellow	Do not confuse with 'Sunburst'.
<i>Koelreuteria paniculata</i> Goldenrain Tree	30	30	bright yellow	yellow	Midsummer blooming.
<i>Malus 'Tschonoskii'</i> Tschonoskii Crabapple	28	14	white	scarlet	Sparse green fruit, pyramidal.
<i>Parrotia persica</i> Persian Parrotia	30	20	Showy Stamens	yellow - orange red	Select for single stem; can be multi-trunked.
<i>Pyrus calleryana</i> 'Aristocrat' Pear	40	28	white	red	
<i>Pyrus calleryana</i> 'Autumn Blaze' Pear	30	25	white	scarlet	Vigorous.
<i>Pyrus calleryana</i> 'Capital' Pear	35	12	white	copper	Smaller than 'Aristocrat', may break up in snow.
<i>Pyrus calleryana</i> 'Redspire' Pear	35	25	white	yellow to red	Pyramidal.
<i>Quercus alba x Quercus robur</i> 'Chrimschmidt' Crimson Spire Oak	45	15		rusty red	Columnar, mildew resistant.
<i>Quercus robur</i> 'fastigiata' Skyrocket Oak	45	15		yellow-brown	Columnar variety of oak.
<i>Styrax japonicus</i> Japanese Snowbell	25	25	white	yellow	Plentiful, green ½" seeds.
<i>Tilia americana x euchlora</i> 'Redmond' Redmond Linden	35	20	fragrant	yellow	Pyramidal, needs water.
<i>Tilia cordata</i> 'Chancole' Linden	35	20	not noticeable	yellow	Pyramidal.
<i>Tilia cordata</i> 'Chancole' Chancelor Linden	35	20	not noticeable	yellow	Pyramidal.
<i>Tilia cordata</i> 'Greenspire' Greenspire Linden	40	30		yellowish	Symmetrical, pyramidal form.
<i>Zelkova serrata</i> 'Musashino' Musashino Zelkova	45	20			
<i>Zelkova serrata</i> 'Village Green' Village Green Zelkova	40	38		rusty red	



RECOMMENDED STREET TREE PLANTING SCHEDULE - Shoreline, WA.

Large Trees: Not appropriate under wires. Good for amenity zones greater than 8' (wider amenity zones recommended where space allows).

Botanical Name Common Name	Height in feet	Spread in feet	Flowers	Fall Color	Comments/Notes
<i>Acer freemanii</i> Autumn Blaze Maple	50	40		orange-red	
<i>Acer nigrum</i> 'Greencolumn' Greencolumn Maple	50	20		yellow-apricot	Good heat resistance.
<i>Acer platanoides</i> 'Emerald Queen' Emerald Queen Maple	50	40		yellow	
<i>Cercidiphyllum japonicum</i> Katsura Tree	40	40		yellow to orange	Heart-shaped foliage.
<i>Fagus sylvatica</i> 'Zlatia' Zlatia Beech	50	35		yellow to golden green	Slow growing.
<i>Fraxinus pennsylvanica</i> 'Urbanite' Urbanite Ash	50	40		deep bronze	
<i>Quercus ruba</i> Red Oak	50	45		red	Fast growing.
<i>Ulmus parvifolia</i> 'Emer II' PP#7552 Allee Elm	50	35		yellow - orange to rust red	Disease tolerant: Dutch Elm & Phloem Necrosis.