SUSTAINABLE LANDSCAPING

Guideline Manual

City of Irvine Public Works Department

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Sustainable Landscaping Guideline Manual

SUSTAINABLE LANDSCAPING GUIDELINE MANUAL

1.00 PURPOSE

The City of Irvine Sustainable Landscaping Guideline Manual is a supplementary document, prepared at the direction of the City Council. It identifies the goals, procedures and guidelines for administering the Sustain ability in Landscaping Ordinance. This Manual should be used in conjunction with the City of Irvine General Plan, Landscape Design Manual, Standard Plans, and the Code of Ordinances of the City of Irvine. Should any portion of this Manual be found in conflict with the provisions of the Sustainability in Landscaping Ordinance, the provisions of the ordinance shall prevail. Any questions arising from this Manual should be directed to the Community Development Department.

The objectives and guidelines contained in this manual are not standards. They are provided as one method to assist the professionally licensed landscape architect in preparing landscape plans which meet the intent of the City Policies and Ordinances. Alternative methods may· be used providing they also meet the intent of the City Policies and Ordinances. These guidelines are not to be used as a basis for rationing water or regulating landscape maintenance.

This Manual concerns actions which collectively work to conserve, recycle and reuse resources invested in landscapes and which work to optimize environmental benefits provided by landscapes. Conservation actions are directed toward increasing the efficiency and reducing the consumption of energy, water, and chemicals in landscaping. Recycling and reuse of resources is pursued through use of reclaimed water and composted landscape trimmings. Environmental benefits of landscaping are to be increased through additional productivity of oxygen to the atmosphere, storage of carbon, developing associations of plants to provide increased wildlife value and microclimate benefits in the form of temperature and pollution mitigation.

1.10 GOAL

It is the goal of the Sustainability in landscaping program to assure that environmental impacts and benefits of landscaping are considered throughout the planning and design process, in conjunction with aesthetic and functional goals, and that decisions will result in increased benefits, decreased impacts to the environment and reduced consumption of resources.

1.20 DEFINITION OF SUSTAINABILITY

Sustainability is a concept which emphasizes the environmental impacts and benefits of ornamental landscapes. Sustainability involves coordination of landscape planning, design and management actions for greater overall environmental benefits within the urban environment.

Sustainability in urban landscapes can be improved when:

landscapes are planned, designed and maintained upon principles of conservation, recycling and reuse of resources with particular emphasis on energy and water conservation.

landscapes are planned, designed and maintained to achieve improved levels of carbon storage and oxygen productivity, species diversity, micro-climate benefit and natural habitat value.

1.30 STATE REQUIREMENTS AND POLICIES

State Law requires each city to adopt a comprehensive, long term general plan for the physical development of the city and any land outside the city's boundaries which is felt to bear relation to the city's planning. State policies which have bearing on the Sustain ability in Landscaping Ordinance include:

To maintain, improve and enhance the quality of air, water, and land according to state and national standards and local needs.

To conserve water, air and energy by considering the effect of future development on these resources and by encouraging new development which uses public facilities currently available and minimizes the need to travel.

To ensure that land use decisions are made with full knowledge of the long- and short-term economic and fiscal implications, as well as environmental effects.

Assembly Bill 939: Source Reduction Act

Assembly Bill 1881: Water Conservation in Landscaping Act

Assembly Bill 3222: Water Conservation Programs Assembly

Bill 3142: Water Conservation

1.40 AMENDMENTS TO GUIDELINE MANUAL

Pursuant to the Sustainability in Landscaping Ordinance, this manual may be amended from time to time by the City's Standards Committee, provided that such amendments are consistent with the ordinance. Amendments made by the Standards Committee to this manual may be appealed to the City Council.

2.00 REVIEW PROCEDURES

2.10 CONCEPT PLAN / ZONE CHANGE

Concept Plan and village-wide Zone Change applications are planning tools used to resolve issues for an entire village. Concept plans typically include maps, statistical analyses, policies, special development requirements, conditions of approval and exhibits to address at a minimum land uses, phasing, public facilities, parks and open space systems, circulation systems, grading, drainage and landscaping. Applications are approved by the City Council with the intent that they guide decisions on requests for future zoning and development within a village. Refer to Section V.E.-SOI and V.E.-S02 of the Zoning Ordinance for a complete description of these processes.

2.12 In conjunction with the application for a concept plan or zone change, the applicant shall, at a minimum, submit proposed landscape design and management objectives which are consistent with adopted City Policies and ordinances. The objectives shall include specific goals regarding environmental, functional and aesthetic aspects of the project landscaping and efforts to achieve these goals. Implementation of these goals shall be established with specific directives which relate to the approval of subsequent development applications.

Applicants are encouraged to seek imaginative concepts which meet or exceed the purpose and intent of the Sustainability in Landscaping Ordinance. The objectives and guidelines contained herein are provided as one method to assist in preparing landscape plans which meet the intent of the City Policies and Ordinances. Based on recommendations from landscape professionals, alternative methods may be used providing they too meet the intent of the City Policies and Ordinances. If alternative methods are used, the project documents shall include information addressing each of the design guideline objectives.

2.13 Objectives and guidelines contained in approved Concept Plan or Zone Change applications which are consistent with the Sustainability in Landscaping Ordinance shall take precedence over objectives and guidelines contained herein.

2.20 OTHER DISCRETIONARY DEVELOPMENT CASES

2.21 Other discretionary development cases include master plans, conditional use permits. wall and streetscape plans and tentative maps. These provide a coordinated review and resolution of major project related issues. The issues addressed by each will vary depending on the type of project. These applications typically include site plans, conceptual grading, drainage and landscape plans, building elevations, circulation systems, and support information. Applications for Tentative Maps are approved by the Subdivision Committee, all other applications are approved at the discretion of the Planning Commission. Refer to Section V.F.-401 to V.F.-605 of the

Subdivision Ordinance, and Section V.E.-803 to V.E.-8ll of the Zoning Ordinance.

2.22 In conjunction with the application for any discretionary development case, the applicant shall, at a minimum, submit conceptual landscape plans which are consistent with adopted City Policies and ordinances, approved concept plans or zone changes, and conditions of approvals.

The landscape plans shall be consistent with the design guidelines contained herein, unless an approved Concept Plan or Zone Change application includes specific alternative provisions to be used which achieve or exceed the purpose and intent of the Sustainability in Landscaping Ordinance.

2.23 Applicants are encouraged to seek imaginative concepts which meet or exceed the purpose and intent of the Sustainability in Landscaping Ordinance. The guidelines contained herein identify how to achieve the objectives in compliance with the Sustainability in Landscaping Ordinance. The objectives and guidelines contained herein are provided as one method to assist in preparing landscape plans which meet the intent of the City Policies and Ordinances. Based on recommendations from landscape professionals, alternative methods may be used providing they too meet the intent of the City Policies and Ordinances. If alternative methods are used, the project documents shall include information addressing each of the design guideline objectives.

2.30 LANDSCAPE AREA DEFINED

2.31 Landscape areas subject to review for consistency with City Policies, and the objectives and guidelines contained herein are defined as follows:

a. All planted and irrigated areas, mulched areas, water features and park areas which do not serve a recreational use which are contained within the development application. Buildings, roadways, parking areas and park recreation areas are excluded.

2.32 In addition, the following areas may be included in determining a landscape area for a project:

a. Unimproved areas proposed for dedication which are not required to mitigate an environmental impact resulting from the project as determined by CEQA procedures.

b. Unimproved open space areas proposed for dedication which are not required as a result of the Conservation and Open Space Element, or the Phased Dedication and Compensating Development Opportunities Program.

c. Unimproved areas proposed for dedication which are not required by the Local Park Code.

3.00 DESIGN GUIDELINES

3.01 The objectives contained herein are essential to the sustainability of landscapes. They are intended to clarify adopted City Policy.

3.02 The objectives and guidelines contained herein are provided as one method to assist in preparing landscape plans which meet the intent of the City Policies and Ordinances. Based on recommendations from landscape professionals, alternative methods may be used providing they too meet the intent of the City Policies and Ordinances. If alternative methods are used, the project documents shall include information addressing each of the design guideline objectives.

3.10 LANDSCAPE PRODUCTIVITY

3.11 Objective:

To increase the productivity of landscapes. Increased productivity leads to greater storage of carbon, production of oxygen, and greater air pollution mitigation. This productivity helps to offset the release of carbon and pollutants to the atmosphere resulting from direct and indirect use of fossil fuels in the development and long-term maintenance of the landscape.

3.12 Guideline:

a. Achieve a level of planting scale, density and quantity which increases city-wide levels of standing biomass to the extent feasible. Biomass accrual is particularly encouraged within parks, open space corridors, and along arterial roadways.

3.20 PLANT ASSOCIATIONS

3.21 Objective:

To improve the productivity, compatibility and vigor of the landscape, reduce the use of energy, water and fertilizers, and increase maintenance efficiency.

3.22 Guidelines:

a. Organize landscape plantings into complementary associations based upon cultural preferences and tolerances for moisture, soils, and micro climates within the site conditions.

b. Use the plant lists contained within the Appendix as a reference. Document or describe the preferences and tolerances of the proposed plant species and groupings. Plant selection is not to be limited to the species identified on the lists, or restricted to assigned groups. Plants from various plant groups may be combined when experience shows they can be compatibly planted together, based on the recommendations from landscape professionals.

The lists organize plant species based upon climate and cultural preferences. Supplemental water needs are estimated for each

plant group which can be used to approximate the yearly water needs of landscapes.

c. A variety of plant species which enable the landscape to adapt to varying project conditions, resist pests and diseases, limit reliance on fertilizers, and which will contribute to the diversity of species throughout the City and surrounding area is encouraged. Plant species diversity which contributes to enhanced biomass productivity and wildlife value is especially encouraged within parks and open space corridors.

3.30 ENERGY CONSERVATION

3.31 Objective:

To reduce levels of direct and indirect energy consumption in landscapes. Direct energy consumption occurs with the use of mechanical equipment through fossil fuel consumption, i.e., combustion of gasoline and diesel. Indirect energy use occurs through the use of electricity to supply irrigation water, the manufacturing of chemical fertilizers and pesticides and the cooling of buildings.

3.32 Guidelines:

a. Select and proportion the use of trees, shrubs, groundcovers and turf grass in a manner to reduce the frequency and volume of pruning, shearing, mowing, and service vehicle operations.

b. Proportion and locate associations of trees, shrubs, groundcovers and turfgrass in combination with grading and soil amendment programs to reduce the need for water, fertilizer, herbicides, and to allow for ongoing use of composted organic humus.

c. Use trees, shrubs, vines and groundcovers to reduce indirect energy use in buildings by reducing solar head load and ambient air temperatures.

3.40 WATER CONSERVATION

3.41 Objective:

To reduce the consumption of water and to use water with greater efficiency. Water conservation practices result in less indirect energy use, less demand for imported water, loss of water to runoff onto pavement, and more efficient use of reclaimed water supplies.

3.42 Guidelines:

a. Emphasize the use of plants which are more closely adapted to the climate and soil conditions of the site.

b. Organize landscape plantings into compatible hydrozones.

c. Design landscapes to prosper within estimated water budgets. Estimate water budgets upon annual evapotranspiration conditions, landscape water needs, irrigation efficiencies and the size of the landscape area.

d. Clearly identify and emphasize the functional purpose of all turfgrass and limit the amount of turfgrass used for aesthetic value.

e. Turfgrass is particularly discouraged within roadway medians and on slopes greater than 5:1.

f. Design landscape areas that can be irrigated and maintained efficiently. N arrow and extremely small areas of turfgrass are discouraged.

g. Design and grade landscape areas to capture and infiltrate irrigation water and seasonal rainfall where possible and where soil conditions permit without causing potential for damage to other improvements.

h. Design irrigation systems to apply water efficiently to root zones considering hydrozones, soil type, infiltration rates and topography.

i. Design irrigation systems which help conserve water through use of current water saving technology including rain guards, check valves, matched precipitation nozzles, and low-volume heads and emitters.

j. Incorporate composted organic humus when available and appropriate during soil preparation stages to improve the relationship between water, nutrients, micro-organisms and oxygen in the soils.

k. Accommodate surface mulching with use of composted organic humus within the landscape area.

3.50 MICROCLIMATE IMPROVEMENT

3.51 Objectives:

To incorporate passive solar design principles which allow plants to optimize the conditions of sun and wind.

To use landscape plants to manage solar incidence up to 2 stories in height on structures to reduce indirect use of energy and to provide for optimum levels of summer cooling and winter heating.

To use landscape plants to reduce heat gain from paved surfaces and provide pleasant, shaded pedestrian areas.

To use landscape plants to reduce levels of particulate air pollution.

3.52 Guidelines:

a. Locate trees and/or shrubs to shade west facing windows, walls and outdoor living spaces to provide heat reduction benefits.

b. Locate trees and/or shrubs to shade east facing windows, walls and living spaces during summer months.

c. Trees and/or shrubs which provide shade on south facing windows, walls and outdoor living spaces are also encouraged.

d. Locate trees with open canopies or deciduous habits along south and east facing walls to provide winter sun exposure on wall surfaces and shade during the summer months.

e. Provide within parking areas, at a minimum, the number of canopy trees required by the Zoning Ordinance in a manner which, during the summer months, achieves maximum levels of shading from each tree canopy.

f. Include within landscapes along major vehicular routes and within other areas with relatively high levels of particulate air pollutants, a level of planting height, texture and density to maximize the capture of particulate air pollutants to the extent possible.

3.60 SOIL MANAGEMENT

3.61 Objectives:

To sustain natural processes of nutrient development and micro-organism activity for successful establishment and growth of plants.

To minimize the use of chemical fertilizers and achieve ongoing recycling and reuse of landscape trimmings which reduces indirect energy use, increases water conservation efficiency and increases the function of natural soil development processes.

3.62 Guidelines:

a. Accommodate ongoing surface mulching with use of composted organic humus within the landscape area. Areas within parks, paseos and open space corridors which are not serving a direct recreational function are particularly encouraged to be planned to accommodate com posted organic humus.

b. Prepare soil preparation specifications based upon a complete agronomic analysis of existing and/or imported soils and available composted humus which reflects the quality and characteristics of the following materials and conditions:

Composted organic humus, when available and at reasonable costs, is to be used in replacement of nitrogen stabilized sawdust materials in all landscape planting areas to be amended, unless the agronomic analysis indicates this would be detrimental to plant establishment and growth.

Fertilizers which are 100% organic are to be used within landscape areas designed to receive composted organic humus on an ongoing basis.

c. Base plant selection upon compatibility with soil preparation specifications with consideration of the limitations due to existing soil characteristics.

Title
SUSTAINABILITY IN LANDSCAPING ORDINANCE

Chapter 1
Chapter 2
Chapter 3 Purpose and Intent
Chapter 4 Policies
Chapter 5 Sustainable Landscaping Guideline Manual
Chapter 6 Application
Conceptual Landscape Plan
Landscape Permit

This ordinance shall be known and cited as the "Sustainability in Landscape Ordinance".

Chapter 1 Purpose and Intent

The purpose of this ordinance is to provide policies, standards, procedures, and guidelines to achieve long term levels of sustainability in landscapes. Sustainability is a concept which emphasizes the environmental impacts and benefits of landscapes. In most instances, a sustainable landscape is one which provides positive levels of carbon storage and oxygen productivity after all demands for energy, water , soil improvement and maintenance activities to support have been accounted for. This ordinance is intended to promote actions that conserve, recycle, and reuse the resources which are invested in landscapes.

Chapter 2 Policies

1. To develop and maintain landscapes that conserve, recycle, and reuse resources to achieve optimum levels of sustainability.

2. To develop and maintain landscapes with increasing levels of conservation and efficiency in energy use.

3. To develop and maintain landscapes upon principles of water conservation and to optimize the use of reclaimed water resources.

4. To develop and maintain landscapes towards optimum levels of biomass storage which provides increased storage of carbon and production of oxygen.

5. To design landscapes comprised of associations of plant which have similar climate, water, soil, sun exposure and maintenance needs.

6. To design and maintain landscape for optimum levels of microclimate benefit to reduce urban heat build-up and energy demand for heating and cooling.

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7. To design and maintain landscapes with reduced levels of turfgrass.

8. To design and maintain landscapes with incorporate organic soil management practices and which will accommodate composted landscape trimmings.

9. To encourage the minimum use of inorganic fertilizers, herbicides, and pesticides in the development and maintenance of landscapes.

10. To design and maintain landscapes which are supportive of the Conservation and Open Space Element with particular reference to enhancement and preservation of significant biotic resources.

11.To develop and sponsor activities and programs to educate residents to the ideas and benefits of sustainable landscapes.

Chapter 3 Sustainable Landscaping Guideline Manual

The Director of Community Development shall formulate such rules, procedures, and interpretations as may be necessary or convenient to administer this division. Such rules, procedures, and interpretations shall be referred to as the "City of Irvine Sustainable Landscaping Guideline Manual" or the "Sustainable Landscape Design Manual" and is hereby adopted by reference by the City Council. The Director of Community Development in conjunction with the Standards Committee is hereby authorized to incorporate further amendments into the Sustainable Landscaping Guideline Manual provided such amendments are consistent with this division. Compliance with this manual shall be a condition of approval for all discretionary development case applications to which this division applies. Compliance with this manual shall also be demonstrated prior to approval of any nondiscretionary development case application to which this division applies and prior to the issuance of a landscape permit. In the event of any conflict between said manual and this ordinance the provisions of this ordinance shall govern. Copies of the current Sustainable Landscaping Guideline Manual shall be on file in the office of the City Clerk and be made available to the public at a fee sufficient to recover costs.

Chapter 4 Application

(a) New Development

This ordinance shall apply to all discretionary and nondiscretionary development case applications and when landscape permits are required. Single family home lots and agriculture are exempt.

(b) Approved Projects

Approved landscape plans for discretionary and non-discretionary development case applications which are valid on the effective date of this ordinance shall remain valid. Landscapes for these proj ects may be builtin accordance with the development standards and landscape standards in effect at the time of approval provided that the development case or non-discretionary approval is valid at the time landscape permits are issued. Any reapplication for an expired permit, development case, or major modification must comply with this ordinance at the time of reapplication or modification.

(c) Projects in Progress

Discretionary development case applications which have been received by the City, but have not been public noticed for the approval hearing by the effective date of this ordinance shall be subject to the provisions of this ordinance unless waived by the Director of Community Development.

Chapter 5 Conceptual Landscape Plan

Conceptual Landscape Plans as defined in the Sustainable Landscaping Guideline Manual shall be approved by an approval body in conjunction with discretionary and non-discretionary development case applications. The approval body for development cases may impose conditions and may require evidence that such conditions are being or will be complied with in the form of subdivision agreements and security as it deems necessary to satisfy the intent of this ordinance.

Chapter 6 Landscape Permits

(a) A landscape permit shall be required for the installation of all landscape planting, irrigation, and revegetation. The Director of Community Development may determine the following to be exceptions:

1. Alterations to existing landscapes within a parcel are not required or proposed in conjunction with building permit, discretionary or non-discretionary development case applications.

2. Alterations to existing landscapes as a result of routine or necessary maintenance and rehabilitation consistent with the approved landscape plans.

(b) To obtain a landscape permit, the applicant must first file an application in writing on a form prescribed by the Director of Community Development. The permit application shall be accompanied by information required by the Director of Community Development and as specified in the Sustainable Landscaping Guideline Manual.

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(c) Funds sufficient to cover the cost incurred by the City in processing applications for landscape permits shall be paid to the City in compliance with the most recent city council resolution pertaining to setting development processing and inspection fees.

(d) Applications for which no permit is issued with one hundred eighty (180) days following the date of application shall expire by limitation, and plans submitted for checking may thereafter be returned to the applicant or destroyed. The Director of Community Development may extend the time for action by the applicant for a period not to exceed one hundred Eighty (180) days upon writteh request by the applicant showing that circumstances beyond the control of the applicant have prevented action from being taken. In order to renew action for and application after expiration, the applicant shall resubmit plans and pay a new plan check fee.

(e) If a permit holder presents satisfactory evidence that unusual difficulties have prevented work being started within sixty (60) days, or completed within one (1) year, or continued without being suspended for one hundred twenty (120) days, the Directorof Community Development may grant extensions of time reasonably necessary by reason of such difficulties. In no case shall such extensions of time exceed a total of one (1) year.

GLOSSARY

Acre-Foot (AF)	The amount of water sufficient to cover one acre to a depth of one foot; about 326,000 gallons.
Biomass	The dry weight of accrued in living material.
Carbon Storage	The fixation of carbon and carbonates from air and water by plants through photosynthesis. Carbon stored in plant tissues remains fixed until released through respiration or combustion.
Character	An attribute, quality, or property of a place, space, or object. The distinguishing character of a place, space, or object.
Chemical Fertilizer	Nitrogen fertilizers produced as petrochemicals from crude oil and natural gas feed stocks. An example is anhydrous ammonia for which methane is the base compound.
Composted Organic Humus	Decomposed organic material including landscape trimmings, sludge, manure, and the like, subjected to internal heating to neutralize pathogens consistent with State of California standards. Usually intended as a soil conditioner.
Direct Energy Use	The on-site combustion of fossil fuels such as gasoline or diesel in the operation of construction and maintenance equipment.
Diversity	Indicated by the number of variety of species in a biotic community.
Domestic Water	See Potable Water.
Evaporation Potential	The potential for water to be evaporated as vapor from land, water, and vegetation surfaces.
Evapotranspiration	Water evaporated from soil surfaces as well as water transpirated by plants, in this case tall fescue turfgrass.
Fuel Modification	Areas adjacent to natural vegetation where planting is managed such that low fuel volume and fire resistant plant species are used. These areas often include hillsides and canyons.
Humus	Decomposed and partially decomposed organic matter.
Hydrazone	An area which identifies the supplemental water use for landscape planting areas.
Indirect Energy Use	Energy which is consumed at off-site locations in order to gererate electricity, and/or to manufacture chemical fertilizers, herbicides and pesticides.
Microclimate	Climatic conditions in an area small enough and close enough to be affected by natural and built features.
Mulch	Leaves, straw, and many other organic materials left loose and applied to the soil surface to prevent water evaporation.

Non-poiable	has been reclaimed from treated waste water supplies or from natural sources, but not meeting potable standards.
Plant Association	Groupings of plants having similar requirements for soils, water, and climate and also similar tolerances for drought, cold, heat, and the like.
Poiable Water	A measure of quality, meaning that the water is safe to drink.
Productivity	The measurement of total living biomass accrued within landscapes.
Reclaimed Water	Water from treated wastewater which is of a level of quality for an intended beneficial use.
Riparian Conidor	Areas ofland, water, and biotic communities occupying the banks and beds of water courses.
Sub-potable Water	See Non-potable Water.
Thermal Mass	Any relatively large inert mass capable of absorbing sunlight and radiating heat. Most particularly: parking lots, roads, and the like.
Water which	

RECOMMENDED PLANT ASSOCIATION LISTS

Attached on the following pages are species of plants which have been organized into three primary associations: Subtropical, Mediterranean and Temperate. These associations of plants reflect their preferences for temperature conditions, estimated water needs and drought tolerance, soils, and growing season. An abbreviated proflle of these associations is presented below. The plant lists further identify species which are native to Irvine, and which are known to provide wildlife and nitrogen fixing benefit.

Plant Association Groupings for Landscapes

PREFERENCES &: TOT .RRANCES	SUBTROPICAL	MEDITERRANEAN	TEMPERATE
Length of Natural Growing Season	365 days growing season without extended rest period.	220 days growing season with drought induced summer rest cycle in natural areas.	180-220 days growing season is preferred with cool winter cycle for dormancy & rest.
Temperature	Tender to frosts	Half hardy to 20F	Hardy to 0-20F
Adaptation to Water Stress	Many species tolerate short periods of moisture stress from 1-4 weeks.	Species are adapted to long cycles of water stress from 4-6 months.	Many species tolerate moisture stress best during winter cool season.
Soil pHPreference	pH 4.5-6.5	pH 6.0-7.8	pH 4.5-6.5
Soil Texture	Sandy ClaylLoamy Clay	CoarselWell Draining	Loam, moist
Sunlight & Heat Tolerance	Varies Sun to Shade Prefers warmth & humidi1;y	Sun & Heat Tolerant Tolerant	Varies Sun to Shade Prefers cool fall & winter temnerature s.
CHARACTER· ISTICS	Large flowers	Small flowers	Small flowers
	Summer to fall	Late winter to spring	Deciduous color
	Fast growth	Moderate growth	Fast growth
	Large, heavy leaves Shallow roots	Small leathery leaves Drop roctB	Large papery leaves DeenlShallow roots

*Estimated Water Needs of Plant Associations by Season

Association Tvne	Dec.-Mar	Mar . .June	July..seDt.	Oct.-Dee	Annual Total
Subtropical	3"	12"	12"	3"	30" (2 1/2 AF)
Mediterranean & So. Calif. Native	6"	3"	0"	3"	12" (1 AF)
Temperate	6"	10"	6"	3"	30" (2 1/2 AF)
Cool Season Grass	6"	18"	18"	6"	48" (3 AF)
Warm Season Grass	3"	15"	12"	3"	33" (5:2 AF)
**Evapotranspiration data City of Irvine:	8"	20"	15"	5"	*48'Y4* AF

*Estimated water needs reflect a combined evaluation of controlled field test data and project landscape conditions, including slope, aspect and varying soil conditions.

** Evapotranspiration data represents the needs of cool season grasses within the climate conditions ofIrvine.

TREES for TEMPERATE ASSOCIATIONS						
A - Trees compatible with Turf Irrigation						
B - Drought Tolerant Plant						
C - Native to California						
D - Native to Irvine						
E - Nitrogen Fixing Plant						
F - Noted for Food Value for Birds						
SCIENTIFIC NAME						SUNSET ZONE
	A	B	C D	E	F	
Acacia dealbata				+		8,9 14-24
Acacia decurrens				+		8,9 14-24
Acacia melanoxylon	+	+		+		8,9 13-24
Acer palmatum + cultivars	+					1-9, 14-24
Ailanthus altissima		+				All
Albizia julibrissin + 'Rosea'	+	+		+	+	2--23
Alnus glutinosa	+			+		1-10,14-24
Alnus oregona	+			+		4-6,15-17
Araucaria araucana	+					4-9, 14-24
Betula pendula + cultivars	+					1-11, 14-24
Calocedrus decurrens + cultivars		+	+			1-12, 14-24
Carya illinoinensis	+					7-9,12-16,18-23
Catalpa species						All
Catalpa x Chilopsis		+				NA
Cercis canadensis + cultivars				+		1-3,7-20
Chamaecyparis species		+				4-6, 15-17 +
Chionanthus retusus						2-9, 14-24
Cordyline australis		+				5,8-11,14-24
Cryptomeria japonica + cultivars						4-9, 14-24
X Cupressocyparis leylandii + cultivars		+	+			3--24
Eriobotrya deflexa		+				8--24
Eriobotrya japonica						4--24
Eucalyptus globulus + 'Compacta'	+					17-22'
Eucalyptus viminalis	+	+				NA
Ginkgo biloba + cvs	+					1-9, 14-24
Gleditsia triacanthos + cultivars	+			+		1-16, 18-20
Hex x altaclarensis 'Wilsonii' species						3--24
Juniperus chinensis 'Torulosa'						NA
Koelreuteria bipinnata	+					8--24
Koelreuteria paniculata	+					2--21

Lagerstroemia indica + cultivars		+				7-9, 14-21
Ligustrum lucidum						5,68-24
Liquidambar styraciflua + cultivars	+					1-9, 14-24
Liriodendron tulip if era	+					1-10, 14-23
Magnolia grandiflora + cultivars	+					4-12, 14-24
TREES for TEMPERATE ASSOCIATIONS						
A - Trees compatible with Turf Irrigation						
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F - Noted for Food Value for Birds						
SCIENTIFIC NAME						SUNSET ZONE
	A	B	C D	E	F	
Metasequoia glyptostroboides						3-9 14-24
Myoporumlaetum						8,9,14-17,19-24
Osmanthus heterophyllus + cultivars						3-10 14-24
Photinia x frasen	+				+	4--24
Photinia serrulata	+				+	4-16 18-22
Pinus nigra						NA
Pinus thunbergiana						NA
Pi stacia chinensis	+				+	8-16 18-23
Platanus x acerifolia + cultivars	+					2--24
Platanus occidentalis	+					All
Podocarpus macrophy llus						4-9 14-24
Populus nigra 'Italica'	+					All
Prunus x blireiana	+					2-12 14-22
Prunus carolinian a						7--24
Prunus cerasifera + cultivars	+					2--22
Pyrus calleryana	+					2-9,14-21
Pyrus kawakamii	+					8,9 12-24
Quercus virginiana	+				+	4--24
Robinia x ambigua + cultivars	+			+	+	All
Robinia pseudo acacia + cultivars	+	+		+		All
Salix babylonica	+				+	All
Salix matsudana + cultivars	+					All
Sapium sebiferum	+					8,9 12-16 18-21
Sequoia sempervirens + cultivars	+		+			4-9 14-24
Sequoiadendron giganteum	+		+			3--24
Sophora japonica + cultivar	+			+		All

Taxodium distichum	+						1-9 14-24
Taxus baccata + cvs							3-9 14-24
Thuja occidentalis + cultivars							2-915-1721-24
tnmus parvifolia + cultivars	+	+					8,9 12-24
Zelkova serrata	+						3--21
SHRUBS for TEMPERATE ASSOCIATIONS							
A - Trees compatible with Turf Irrigation							
B - Drought Tolerant Plant							
C - Native to California							
D - Native to Irvine							
E - Nitrogen Fixing Plant							
F - Noted for Food Value for Birds							
SCIENTIFIC NAME							SUNSET ZONE
	A	B	C	D	E	F	
Abelia x 'Edward Goucher'							12--24
Abelia x grandiflora + cultivars							5-24 (15°)
Acer palmatum + cultivars							1-9, 14-24
Aspidistra elatior							4-9, 12-24
Aucuba japonica + cultivars							4-11, 14-23
Berberis species		+				+	1-1114-17
Buddleia species							1-9, 12-24
Buxus microphylla japonica + cultivars							8--24
Buxus microphylla koreana							All
Buxus sempervirens + cultviars							3-6 15-17
Camellia reticulata							4-9, 14-24
Camellia sasanqua + varieties							4-9, 14-24
Carpenteria californica		+	+				5-9, 14-24
Chaenomeles species							1--21
Chamaecyparis species		+					4-6, 15-17 +
Cordyline australis + cultivar		+					5, 8-11, 14-24
Corokia cotoneaster							4--24
Cotoneaster apiculatus + cultivars						+	All
Cotoneaster species						+	4--24
Cytisus x praecox + cultivars					+		2-9, 12-22
Dietes vegeta							8,9,13-24
Elaeagnus x ebbingei					+		5--24

Elaeagnus pungens + cultivars		+			+		4--24
Escallonia species							4-9,14-17,20-24
Euonymus japonica + cultivars							2--20
Fatsia japonica + 'Variegata'							4-9, 13-24
Hebe species + cvs							14-24
Hemerocallis species							All
Hibiscus syriacus							1--21
Hydrangea macrophylla + cultivars							2--24
Hypericum beanii		+					4--24
Hypericum x moseranum		+					4--24
Hex species		+					4-9, 14-24
SHRUBS for TEMPERATE ASSOCIATIONS							
A - Trees compatible with Turf Irrigation							
B - Drought Tolerant Plant							
C - Native to California							
D - Native to Irvine							
E - Nitrogen Fixing Plant							
F - Noted for Food Value for Birds							
SCIENTIFIC NAME							SUNSET ZONE
	A	B	C	D	E	F	
Jasminum mesnyi		+					4--24
Juniperus species		+					NA
Lagerstroemia indica + cultivars		+					7-9, 14-21
Ligustrum japonicum + cultivars							4--24
Ligustrum lucidum							5,6 8-24
Ligustrum ovalifolium							4--24
Magnolia x soulangiana + cultivars							1-10, 12-24
Magnolia stellata + cultivars							1-9, 14-24
Mahonia aquifolium + cultivars		+					1--21
Mahonia bealei		+					All
Mahonia lomariifolia		+					6-9, 14-24
Nandina domestica + cultivars							5--24
Osmanthus fragrans							8,9 12-24
Osmanthus heterophyllus							3-1014-24
Phormium tenax + cultivars							7 --24
Photinia x fraseri		+					4--24
Photinia glahra							4--24
Photinia serrulata						+	4-16 18-22

Pittosporum crassifolium + cultivars		+					9, 14-17 19-24
Pittosporum eugenioides							9, 14-17 19-22
Pittosporum tenuifolium							9, 14-17 19-24
Pittosporum tobira + cultivars		+					8--24
Platycladus orientalis + cultivars							All
Podocarpus macrophyllus + cultivar							4-9 14-24
Prunus caroliniana + cultivars		+					7--24
Pyracantha species + cultivars		+					3--24
Rhododendron spp. + cultivars - Azalea							NA
Ribes sanguineum + cultivars						+	4-9 14-24
Rosa banksiae + cultivars		+				+	NA
Sarcococca ruscifolia							4-9 14-24
Taxus baccata + cultivars							3-9 14-24
Ternstroemia gymnanthera							4-9 12-24
Thuja species							2-915-1721-24
Viburnum species						+	5-9 14-24
Xylosma congestum		+					8--24
VINES for TEMPERATE ASSOCIATIONS							
A - Trees compatible with Turf Irrigation							
B - Drought Tolerant Plant							
C - Native to California							
D - Native to Irvine							
E - Nitrogen Fixing Plant							
F - Noted for Food Value for Birds							
SCIENTIFIC NAME							SUNSET ZONE
	A	B	C	D	E	F	
Actinidia chinensis							4-9, 14-24
Akebia quinata							All
Ampelopsis brevipeduculata						+	All
Campsis grandiflora							2-12, 14-21
Campsis radicans							1--21
Campsis x tagliabuana							ALL
Clematis species							4-9, 12-24
Euonymus fortunei radicans + cultivars							1--17
X Fatshedera lizei							4-10, 12-24
Ficus pumila + 'Minima'							8--24
Gelsemium sempervirens							8--24
Jasminum grandiflorum						+	5-9, 12-24
Jasminum polyanthum							5-9, 12-24

Lonicera heckrottii						+	2--24
Polygonum aubertii							All
Trachelospermum jasminoides							8--24
Wisteria floribunda + cultivars					+	+	All
Wisteria sinensis + cultivars					+	+	All
GROUNDCOVERS for TEMPERATE ASSOCIATIONS							
SCIENTIFIC NAME							SUNSET ZONE
Abelia grandiflora 'Prostrata'							5~-24
Ajuga reptans + cultivarss							All
Arctostaphylos uva-ursi		+	+				1-9 14-24
Bergenia cordifolia							1-9, 14-24
Bergenia crassifolia							1-9 14-24
Campanula species							All
Cerastium tomentosum							All
Ceratostigma plumbaginoides							2~9, 14-24
Cotoneaster species							All
Duchesnea indica							All
GROUND COVERS **for TEMPERATE ASSOCIATIONS**							
A - Trees compatible with Turf Irrigation							
B - Drought Tolerant Plant							
C - Native to California							
D - Native to Irvine							
E - Nitrogen Fixing Plant							
F - Noted for Food Value for Birds							
SCIENTIFIC NAME							SUNSET ZONE
	A	B	C	D	E	F	
Euonymus fortunei radicans + cultivars		+					1--17
Fragaria chiloensis							4--24
Hedera helix + cvs							All
Hypericum calycinum							2--24
Iberis sempervirens							All
Juniperus chinensis 'Procumbens'							All
Juniperus conferta							All
Juniperus horizontalis							All
Juniperus h. 'Bar Harbor'							All

Juniperus h. 'Wiltonii'							All
Juniperus sabina 'Tamariscifolia'		+					NA
Liriope muscari + cultivars							5-10, 12-24
Liriope spicata							All
Lonicera japonica 'Halliana'		+				+	2--24
Mahonia aquifolium 'Compacta'		+	+			+	1--21
Mahonia repens ,		+	+			+	1--21
Ophiopogon japonicus							5-10 12-24
Oxalis species							4-9 14-24
Pachysandra tenninalis							1-10 14-21
Potentilla tabernaemontanii							All
Sedum species		+					8,9 14-24
Trachelospermum asiaticum							6--24
Trachelospermum jasminoides							8--24
Vinca major							5-24 (15)
Vinca minor + cultivars							
END Temperate Plant List							
TREES for MEDITERRANEAN ASSOCIATIONS							
INFORMATION COLUMNS							
A - Trees compatible with Turf Irrigation							
B - Drought Tolerant Plant							
C - Native to California							
D - Native to Irvine							
E - Nitrogen Fixing Plant							
F - Noted for Food Value for Birds							
SCIENTIFIC NAME							SUNSET ZONE
–	A	B	C	D	E	F	

Acacia baileyana + cv		+			+	+	7-9, 13-24
Acacia pendula		+			+		13-24
Acacia saligna	+				+		14-24
Agonis flexuosa							15-17, 20-24
Alnus cordata	+						8,9 14-24
Alnus rhombifolia	+		+				1-9,14-21
Angophora costata		+					16,17,21-24
Arbutus unedo + cvs		+				+	4--24
Brachychiton populneus	+						12-24 (18°F)
Callistemon citrinus	+					+	8,9,12-24
Casuarina cunninghamiana	+	+			+		8, 9 12-24
Casuarina stricta	+				+		8, 9 12-24
Cedrus atlantica + cvs	+	+					4--23
Cedrus deodara + cvs	+	+					4-12, 14-24
Ceratonia siliqua		+			+	+	9, 13-16, 18-24 (22°F)
Cercis occidentalis			+		+	+	2--24
Chamaerops humilis		+					5--24
Cupressus forbesii		+					8-14 18-20
Cupressus macrocarpa			+				17 only
Cupressus sempervirens + cvs		+					4-24\best 8-15, 18-20
Eucalyptus caesia							NA
Eucalyptus calophylla	+	+					NA
Eucalyptus camaldulensis .	+	+					12-15°F
Eucalyptus cinerea							14-17°F
Eucalyptus citriodora	+						NA
Eucalyptus cladocalyx	+	+					23-28°F
Eucalyptus deglupta	+						NA
Eucalyptus erythrocorys		+					23-26°F
Eucalyptus ficifolia	+	+					NA
Eucalyptus grandis	+						NA
Eucalyptus lehmannii		+					25-28°F
TREES for MEDITERRANEAN ASSOCIATIONS							
A - Trees compatible with Turf Irrigation							
B - Drought Tolerant Plant							
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D - Native to Irvine							
E - Nitrogen Fixing Plant							
F - Noted for Food Value for Birds							
SCIENTIFIC NAME							SUNSET ZONE
	A	B	C	D	E	F	

Eucalyptus leucoxylon		+			14-18°F
Eucalyptus macrocarpa		+			8-12°F
Eucalyptus maculata	+	+			19-23°F
Eucalyptus microtheca		+			5-10°F
Eucalyptus nicholii					12-15°F
Eucalyptus polyanthemos		+			14-18°F
Eucalyptus pulverulenta		+			15-21°F
Eucalyptus robusta					11-15°F
Eucalyptus rudis		+			12-18°F
Eucalyptus sideroxylon		+			10-15°F
Eucalyptus torquata					NA
Fraxinus uhdei + cvs	+				9,12-24
Fraxinus velutina + cvs	+				8,9,10-24
Geijera parviflora		+			8,9,13-24
Laurus nobilis					5-9, 12-24 (20°F)
Leptospermum laevigatum + cvs		+			14-24
Lithocarpus densiflorus					4-7, 14-24
Lyonothamnus floribundus var. asplenifolius		+	+	+	15-17
Melaleuca armillaris					9, 12-24
Melaleuca linariifolia					9, 13-23
Melaleuca quinquenervia	+				9, 13, 16, 17 20-24
Melaleuca styphelioides					9, 13-24
Nerium oleander		+			8-16 18-23
Olea europaea + cvs		+			8,9 11-24
Phoenix canariensis		+			9,12-24
Phoenix dactylifera		+		+	9,12-24
Pinus canariensis		+			10-20°F
Pinus eldarica		+			NA
Pinus halepensis		+			NA
Pinus patula					15°F
Pinus pinea		+			NA
Pinus radiata		+	+		15°F
Pinus torreyana		+	+	+	12°F
Pittosporum phillyraeoides		+			9,12-24
TREES for MEDITERRANEAN ASSOCIATIONS					
A - Trees compatible with Turf Irrigation					
B - Drought Tolerant Plant					
C - Native to California					
D - Native to Irvine					
E - Nitrogen Fixing Plant					
F - Noted for Food Value for Birds					

SCIENTIFIC NAME							SUNSET ZONE
	A	B	C	D	E	F	
Platanus racemosa	+		+	+		+	4--24
Prunus lyonii						+	7-9 12-24
Punica granatum + cvs						+	7--24
Quercus agrifolia			+	+		+	7-10 12 14-24
Quercus dumosa						+	4-9 14-24
Quercus engelmannii						+	18-24
Quercus Hex						+	4--24
Quercus suber						+	5-7 8-16 18-21
Rhus lancea							8,9 12-24
Sambuicas mexicana		+	+	+		+	All
Schinus molle							8,9 12-24
Trachycarpus fortunei							4--24
Umbellularia californica	+		+			+	4-10 12-24
Vitex agnus-castus							4--24
Washingtonia filifera						+	8,9,11-24
Washingtonia robusta			+			+	8,9,11-24

SHRUBS & PERENNIALS for MEDITERRANEAN ASSOCIATIONS

SCIENTIFIC NAME							SUNSET ZONE
	B	C	D	E	F	G	
Acacia cultriformis		+			+		13-24
Acacia cyclops		+			+		8,9 13-24
Acacia longifolia		+			+		8,9 14-24
Acacia redolens + cv		+			+		8,9 12-24
Acacia saligna					+		14-24
Alyogyne huegelii + cvs							15-1720-24 (23°F)
Anigozanthos species							15-24
Arbutus unedo + cvs		+				+	4--24
Arctostaphylos species			+			+	NA
Baccharis pilularis var. Consanguinea		+	+	+		+	5-11,14-24
Callistemon citrinus						+	8,9 12-24
Calycanthus occidentalis			+				4-9, 14-22
Ceanothus species			+	+	+	+	4-7,14-24

SHRUBS & PERENNIALS for MEDITERRANEAN ASSOCIATIONS

A - Trees compatible with Turf Irrigation							

B - Drought Tolerant Plant							
C - Native to California							
D - Native to Irvine							
E - Nitrogen Fixing Plant							
F - Noted for Food Value for Birds							
SCIENTIFIC NAME							SUNSET ZONE
	A	B	C	D	E	F	
Centranthus ruber							7-9, 14-24
Cercis occidentalis			+			+	2--24
Cistus species							7-9,12-24
Comarostaphylis diversifolia		+	+			+	7-9, 14-24
Convovulus cneorum							7-9, 12-24
Cytisus species					+		8,9 12-24
Dendromecon species		+	+				5-8, 14-24
Dodonaea visco sa + cv		+					7-9, 12-24
Echium fastuosum							14-24
Encelia californica		+	+	+		+	NA
Erica species							15-17,21-24
Eriogonum species		+	+	+		+	NA
Eucalyptus lehmannii		+					25-28°F
Fremontodendron species		+	+			+	7--24
Galvezia speciosa + cvs		+	+			+	14-24
Garrya elliptica		+	+				5-9,14-21
Grevillea species						+	NA
Hakea suaveolens							9,12-17,19-24
Heteromeles arbutifolia		+	+	+		+	5--24
Iva hayesiana		+	+				NA
Lavandula species							4--24
Leptospermum laevigatum + cvs		+					14-24
Leptospermum scoparium + cvs							14-24
Limonium perezii							13,16,1720-24
Lupinus species			+		+	+	14-17,22-24
Mahonia 'Golden Abundance'		+				+	1--21
Malosma laurina		+	+	+			14-24
Melaleuca armillaris							9, 12-24
Melaleuca nesophylla							9, 13-24
Myoporumlaetum							15-17 19-24
Myrica californica			+		+	+	4-614-1720-24
Myrtus communis + cvs		+					8--24
N erium oleander		+					8-16 18-23
Pennisetum setaceum 'cupreum'							All
Prunus ilicifolia		+	+			+	7 -9 12-24

SHRUBS & PERENNIALS for MEDITERRANEAN ASSOCIATIONS							
A - Trees compatible with Turf Irrigation							
B - Drought Tolerant Plant							
C - Native to California							
D - Native to Irvine							
E - Nitrogen Fixing Plant							
F - Noted for Food Value for Birds							
SCIENTIFIC NAME							SUNSET ZONE
	A	B	C	D	E	F	
Prunus lyonii		+	+			+	7 -9 12-24
Punica granatum + cvs						+	7--24 .
Raphiolepis indica + cvs							8-10 12-24
Rhamnus alaternus + cvs							4--24
Rhamnus californica + cvs		+	+	+		+	4--24
Rhus integrifolia		+	+	+		+	15-17 20-24
Rhus ovata		+	+	+		+	7--24
Ribes speciosum			+			+	8,9 14-24
Romneya coulteri + cv		+	+				5-1012-24
Rosmarinus officinalis + cvs		+					4--24
Salvia greggii							All
Salvia species		+	+	+	+	+	10--24
Santolina chamaecyparissus + cv							All
Sandolina virens							All
Senecio cineraria							All
Sollya heterophylla + cv							8,9 14-24
Teuchrium fruiticans							4--24
Trichostema lanatum			+			+	14-24
Viburnum tinus + cvs							4-10 12,13 14-23
Vitex agnus-castus							4--24
Westringia rosmariniformis		+					15-17 19-24
VINES for MEDITERRANEAN ASSOCIATIONS							
SCIENTIFIC NAME							SUNSET ZONE
Hardenbergia violaceae + cv					+		9--24
Hedera canariensis							8,9,12-24
Hedera helix							All

GROUND COVERS for MEDITERRANEAN ASSOCIATIONS							
A - Trees compatible with Turf Irrigation							
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D - Native to Irvine							
E - Nitrogen Fixing Plant							
F - Noted for Food Value for Birds							
SCIENTIFIC NAME							SUNSET ZONE
	A	B	C	D	E	F	
Acacia redolens + cv		+			+		8,9 12-24
Arctostaphylos species						+	6-914-24
Armeria maritima			+				All
Artemisia californica 'Canyon Grey'		+	+				12--24
Artemisia pycnocephala			+				All
Baccharis pilularis + cvs		+	+			+	5-11, 14-24
Ceanothus griseus var. horizontalis + cvs			+		+	+	4-7,14-24
Cistus x hybridus (corbariensis)							7-9,12-24
Cistus salviifolius							7-9,12-24
Convovulus mauritanicus							4-9, 12-24
Eriogonum species		+	+	+	+	+	14-24
Euphorbia rigida (biglandulosa)							4--24
Hedera canariensis							8,9 12-24
Hedera helix							All
Heuchera maxima							15-24
Iva hayesiana		+					NA
Myoporum parvifolium							14-16,18-24
Pennisetum setaceum 'cupreum'							All
Pyracantha species						+	NA
Ribes viburnifolium			+			+	8,9 14-24
Rosmarinus officinalis 'Prostratus'		+					4--24
Salvia mellifera + cvs		+	+	+		+	NA
Salvia sonomensis + cv			+				NA
Santolina chamaecyparissus + cv							All
Santolina virens							All
Teucrium chamaedrys							All

END Mediterranean Association List							
TREES for SUBTROPICAL ASSOCIATIONS							
A - Trees compatible with Turf Irrigation							
B - Drought Tolerant Plant							
C - Native to California							
D - Native to Irvine							
E - Nitrogen Fixing Plant							
F - Noted for Food Value for Birds							
SCIENTIFIC NAME							SUNSET ZONE
	A	B	C	D	E	F	
Abutilon hybridum + cvs							15-24
Agathis robusta	+						15, 16 20-23
Araucaria species	+						7-9, 12-24
Archontophoenix cunninghamiana	+						21-24
Arecastrum romanzoffianum	+						12,13,15-17,19-24
Bauhinia blakeana	+				+		19,21,23
Bauhinia forficata	+				+		9, 12-23
Bauhinia variegata + cv	+				+		13, 18-23
Brachychiton acerifolius + cv	+						16-21, 23
Brachychiton discolor	+						NA
Calodendrum capense	+						19,21-24
Cassia excelsa	+				+		12, 13, 19-24
Cassia leptophy lla	+				+		21-24
Casuarina equisetifolia	+	+			+		8, 9 12-24
Chorisia insignis							19-24
Chorisia speciosa + cvs							15-24
Cinnamomum camphora	+						8, 9 12-24
Cocculus laurifolius	+						8,9 12-24
Cupaniopsis anacardiopsis	+						16, 17 19-24 (22')
Erythrina caffra					+		21-24
Erythrina coralloides					+		12, 13 19-24
Erythrina crista-galli		+			+		7-9,12-17,19-24

Erythrina humeana		+			+		12, 13 20-24
Feijoa sellowiana						+	7-9, 12-24
Ficus auriculata							20-24
Ficus benjamina							13,23,24
Ficus elastica + cvs	+						16, 17 19-24
Ficus macrophylla	+						17,19-24
Ficus micro carp a	+						9, 15-24
Ficus micro carp a var. nitida	+						9,15-24
Ficus rubiginosa + cvs	+						18-24
Grevillea robusta	+	+				+	8,9,12-24
Harpephyllum caffrum	+						17,1921-24
TREES for SUBTROPICAL ASSOCIATIONS							
A - Trees compatible with Turf Irrigation							
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D - Native to Irvine							
E - Nitrogen Fixing Plant							
F - Noted for Food Value for Birds							
SCIENTIFIC NAME							SUNSET ZONE
	A	B	C	D	E	F	
Hibiscus rosa-sinensis + cvs							9, 12, 13, 16, 19-24
Hymenosporum flavum	+					+	8,9 14-23
Jacaranda mimosifolia + cv	+						15-24
Lagunaria patersonii	+						13, 15-24
Leucodendron argenteum	+						17,20-24
May tenus boaria + cv	+						8,9 14-21
Metrosideros excelsus	+						17,23,24
Olmediella betschlerana	+						9 14-24
Phoenix reclinata	+						23,24
Pittosporum rhombifolium	+						12--24
Pittosporum undulatum	+						14-1721-24
Pittosporum viridiflorum							15-17 20-24
Podocarpus gracilior	+						13-24
Podocarpus henkelii							8,9 14-24
Psidium littorale var. longipes							9, 15-24
Schefflera actinophylla							21-24
Schinus terebinthifolius	+					+	15-17 19-24
Stenocarpus sinuatus							16,1720-24
Strelitzia nicolai							22-24

Syzygium paniculatum	+					+	16,17 19-24
Tabebuia species	+						15,16 20-24
Tecoma stans							12,13 21-23
Thevetia peruviana							12-1421-24
Tipuana tipu	+				+		13-16 18-24
Tristania conferta	+						19-24
Tupidanthus calyptratus							19-24

SHRUBS and PERENNIALS for SUBTROPICAL ASSOCIATIONS

A - Trees compatible with Turf Irrigation							
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F - Noted for Food Value for Birds							
SCIENTIFIC NAME							SUNSET ZONE
	A	B	C	D	E	F	
Abutilon species							13,15-24
Agapanthus africanus + cvs							7-9, 12-24
Agapanthus orientalis							7-9,12-24
Agave attenuata							20-24
Asparagus densiflorus 'Myers'							12--24
Asparagus d. 'Sprengeri' + cv						+	(24')
Bauhinia punctata (galpinii)					+		13, 18-23
Bougainvillea species + cvs		+					12,13,15-17,19,21-2
Bougainvillea glabra		+					12,13,15-17,19,21-2
Brugmansia species							16-24
Brunfelsia pauciflora 'Floribunda'							13-17,20-24
Calliandra haematocephala + cv					+		22-24
Calliandra tweedii					+		15-21,22-24
Carissa grandiflora + cvs						+	12, 13, 16-21,22-24
Cassia species					+		13, 22-24

Cestrum species							13, 17 19-24
Choisya ternata							7-9,12-17
Cocculus laurifolius							8,9 12-24
Coprosma repens + cvs							15-17,21-24
Cordyline indivisa							16, 17 20-24
Cordyline stricta							16, 17 20-24
Correa species							14-24
Corynocarpus laevigata							16,2317,24
Crassula species		+					16,17,22-24
Dizygotheca elegantissima							16,17 22-24
Dombeya species							21-24
Dracaena draco		+					16,1721-24
Duranta repens + cvs							13,16,17,21-24
Euphorbia species							NA
Feijoa sellowiana		+				+	7-9, 12-24
Felicia amelloides							8,9 13-24
Ficus elastica + cvs							16, 17 19-24
Fuchsia spp. + hybrids							16, 17 22-24

SHRUBS and PERENNIALS for SUBTROPICAL ASSOCIATIONS

A - Trees compatible with Turf Irrigation							
B - Drought Tolerant Plant							
C - Native to California							
D - Native to Irvine							
E - Nitrogen Fixing Plant							
F - Noted for Food Value for Birds							
SCIENTIFIC NAME							SUNSET ZONE
	A	B	C	D	E	F	
Gardenia jasminoides + cvs							7-9, 12-16, 18-23
Grewia occidentalis							8,914-24
Hibiscus rosa-sinensis + cvs							9, 12, 13, 16, 19-24
Justicia brandegeana + cvs							16,17 21-24
Justicia carnea							8,9 13-24
Kalanchoe species							21-24
Kniphofia uvaria + vars		+					1-9, 14-24
Leucodendron argenteum							17,20-24
Monstera deliciosa							21-24
Murraya paniculata							21-24
Ochna serrulata		+					14-24

Pelargonium species							15-1722-24
Philadelphus species							8,9 14-24
Philodendron selloum							8,9 14-24
Phoenix robelinii							23,24
Pittosporum rhombifolium							12--24
Pittosporum undulatum		+					14-17 21-24
Pittosporum viridiflorum							15-1720-24
Plumbago auriculata		+					8,9 12-24
Podocarpus gracilior							13-24
Podocarpus henkelii							8,9 14-24
Polygala virgata							8,9 12-24
Portulacaria afra		+					13, 16, 17 22-24
Psidium littorale var. longipes							9, 15-24
Russelia equisetiformis							19-24
Scheffiera arborecola							23--24
Solanum ratonnetii							12,13,15-24
Strelitzia reginae							22-24
Syzygium paniculatum 'Compacta'						+	16,17 19-24
Tecomaria capensis							12,13,16 18-24
Thevetia peruviana							12-1421-24
Tibouchina urvilleana							16,17 21-24
Tulbaghia violacea		+					14-24
Tupidanthus calyptratus							19-24
VINES for SUBTROPICAL ASSOCIATIONS							
A - Trees compatible with Turf Irrigation							
B - Drought Tolerant Plant							
C - Native to California							
D - Native to Irvine							
E - Nitrogen Fixing Plant							
F - Noted for Food Value for Birds							
SCIENTIFIC NAME							SUNSET ZONE
	A	B	C	D	E	F	
Antigonon leptopus							12,13 18-21
Asparagus setaceus		+					(24')
Beaumontia grandiflora							12, 13, 16-17,21-24
Bougainvillea species + cvs		+					12,13,15-17,19,21,22-
Cissus antarctica							13, 16-24
Cissus hypoglauca							13-24
Cissus rhombifolia							13, 15, 1621-24

Clytostoma callistegioides							9, 13-24
Distictis buccinatoria		+					8,9 14-24
Distictis laxiflora							16, 22-24
Distictis 'Rivers'							16, 22-24
Hibbertia scandens							16,1721-24
Jasminum nitidum							12,16 19-21
Lonicera hildebrandiana							9,14-17,19-24
Macfadyena unguis-cati		+					8--24
Mandevilla 'Alice du Pont'							21-24
Monstera deliciosa							21-24
Pandorea jasminoides							16-24
Pyrostegia venusta (Bignonia v.)							13,1621-24
Rhoicissus capensis							16,1721-24
Solandra maxima							17,2-24
Solanum jasminoides		+					8,9 12-24
Stephanotis floribunda							23--24
Stigmaphyllon ciliatum							19-24
Tetrastigma voinerianum							17,20-24
Thunbergia grandiflora							16,21-24
Thunbergia gregorii							21-24
Vigna caracalla					+		12--24
GROUNDCOVERS for SUBTROPICAL ASSOCIATIONS							
A - Trees compatible with Turf Irrigation							
B - Drought Tolerant Plant							
C - Native to California							
D - Native to Irvine							
E - Nitrogen Fixing Plant							
F - Noted for Food Value for Birds							
SCIENTIFIC NAME							SUNSET ZONE
	A	B	C	D	E	F	
Agapanthus africanus + cvs							7-9, 12-24
Agapanthus orientalis							7-9,12-24
Aptenia cordifolia							17,21-24

Arctotheca calendula			8,9 13-24
Asparagus densiflorus 'Myers'			12--24
Carissa grandiflora 'Prostrata'		+	22-24
Carpobrotus chilensis	+		12--24
Carpobrotus edulis	+		NA
Catharanthusroseus	+		All
Cephalophyllurn 'Red Spike'			8, 9, 14-24
Clivia miniata			15-17,19-24
Coprosma x kirkii	+		8,914-17,21-24
Delosperrna alba	+		12--24
Drosanthernurn floribundum	+		14-24
Drosanthernurn hispidurn	+		14-24
Gazania species	+		8--24
Gazania rigens leucolaena	+		8--24
Kalanchoe species			21-24
Lantana montevidensis + cvs	+		17,23,24
Maleophora croce a	+		11--24
Maleophora luteola	+		15-24
Myoporum x 'pacifica'			NA
Osteosperrnurn fruticosurn			8,9 14-24
Pelargonium peltatum			15-17,22-24
Phyla nodiflora	+		8--24
Polygonurn capita turn			8,9 12-24
Senecio rnandraliscae			13,16,1721-24
Soleirolia soleirolii			8--24
Thunbergia gregorii			21-24
Tulbaghia violacea			14-24
Verbena peruviana	+		8--12
END Subtropical List			