



Landscape Manual

Introduction

In 2006, the State of California adopted the Water Conservation in Landscaping Act (Assembly Bill 1881) amending Government Code Sections 65591 et seq. to provide for greater efforts at water conservation and more efficient use of water in landscaping. In 2008, the California Department of Water Resources (DWR) prepared the first Model Water Efficient Landscape Ordinance (MWELO) for cities to use in updating their landscaping requirements.

To meet the State requirements of AB 1881, the City Council adopted Ordinance 430 amending Title 17 of the Solana Beach Municipal Code (SBMC) by repealing the existing Landscaping Regulations of section 17.56 and replacing them with the Water Efficient Landscape Regulations after conducting a public hearing on the matter on March 23, 2011.

On January 17, 2014, Governor Brown proclaimed a State of Emergency throughout the State of California due to severe drought conditions. On April 1, 2015, Governor Brown issued Executive Order B-29-15 requiring, among other things, the DWR to update the State MWELO through expedited regulation.

The Landscape Ordinance 467 contained in this Landscape Manual replaces Ordinance 430, and was adopted by the Solana Beach City Council on December 9, 2015. This second version, updated to meet State mandated requirements, is customized to fit the specific needs of the City of Solana Beach. The invasive plant species list contained in this Landscape Manual was taken from the California Invasive Plant Council, and revised by the City's consulting landscape Architect Pamela Elliott specifically for Solana Beach and its environs.

The intent of this Landscape Manual is to explain the applicability of the City's Water Efficient Landscape Regulations, describe the landscape review process, and provide the necessary documents to comply with Landscape Ordinance 467.



City of Solana Beach Landscape Plan Review Process

A landscape plan is required for new development projects with an aggregate landscape area equal to or greater than 500 square feet requiring a building permit, plan check or development review.

A landscape plan is required for rehabilitated landscape projects with an aggregate landscape area equal to or greater than 2,500 square feet requiring a building permit, plan check, or development review.

If a project meets one of the above thresholds, landscaping plans (a complete Landscape Documentation Package) must be prepared by a licensed landscape professional and two (2) sets of plans must be submitted with an ETWU Worksheet (on the City's form) to the Planning Department along with a fee, as determined on the landscape plan review fee schedule:

Landscape Area	Deposit	15% Admin Fee	Total
(A) Ministerial	\$3,000	\$450	\$3,450
(B) Discretionary	\$5,000	\$750	\$5,750

The landscape review fee covers up to three (3) reviews in three (3) categories, as applicable. The three (3) categories of landscape review are:

1. Concept Plan Review
2. Construction Plan Review
3. Landscape Inspections

If less than three (3) reviews are conducted a refund of the remaining fee will be returned to the applicant. If more than three (3) reviews are needed, additional fees will be collected. In most cases, landscape plan reviews and inspections will not exceed three (3) reviews.

The City's consulting Landscape Architect will review landscape plans and conduct landscape inspections in a timely manner. Upon completion of the landscaping, a Certificate of Completion will be issued by the City.



ESTIMATED TOTAL WATER USE (ETWU) WORKSHEET

<i>Applicant Last Name</i>	<i>Project/Plan Check Number</i>	<i>Project Address</i>
----------------------------	----------------------------------	------------------------

The project's Estimated Total Water Use is calculated using the following formula: $ETWU = (ETo)(0.62) \left(\frac{PF \times HA}{IE} + SLA \right)$

- ETWU = Estimated total water use per year (gallons per year)
- ETo = Evapotranspiration rate (inches per year)
- PF = Plant Factor from WUCOLS (see Definitions)
- HA = Hydro-zone Area (square feet): Define hydro-zones by water use: very low, low, moderate and high
- SLA = Special Landscape Area (square feet): Edible plants, irrigated with recycled water, & turf used for active play
- 0.62 = Conversion Factor (to gallons per square foot)
- IE = Irrigation Efficiency

CITY OF SOLANA BEACH ESTIMATED TOTAL WATER USE (ETWU) WORKSHEET						
	Line	Hydro-zone Number (1 - 4 Below – use as many tables as necessary to complete all hydrozones)				
		1	2	3	4	SLA
Evapotranspiration Rate (ETo) See "A" below	1	Use 41 (west of I-5) / 47 (east of I-5)				
Conversion Factor - 0.62	2	0.62				
(Line 1 x Line 2)	3	25.42 (west of I-5) / 29.14 (east of I-5)				
Plant Factor (PF) See "B" below	4					
Hydrozone Area (HA) - in square feet	5					
(Line 4 x Line 5)	6					
Irrigation Efficiency (IE) See "C" below	7					
(Line 6 ÷ Line 7)	8					
TOTAL of all Line 8 boxes + SLA	9					
Line 3 x Line 9 Estimated Total Water Use - ETWU (gallons per year) Total shall not exceed MAWA below	10					
A <i>ETo - Evapotranspiration rate =</i> 41 (west of I-5) 47 (east of I-5)		B <i>PF - Plant Factor – Use WUCOLS values to determine the category for each species used. The highest water use PF must be used when more than one PF is shown in a hydro-zone.</i> 0.1 = VLW - Very Low Water Use Plants 0.3 = LW - Low Water Use Plants 0.6 = MW - Moderate Water Use Plants 1.0 = HW - High Water Use Plants		C <i>IE – Irrigation Efficiency</i> Spray = .55 Rotor = .70 Bubbler = .75 MP rotator = .75 Drip & Micro-spray = .81 <i>A different IE may be used if supported by documentation subject to approval by the City Planner</i>		

MAXIMUM APPLIED WATER APPLICATION (MAWA) calculation:

Evapotranspiration adjustment factor (ETAF) use .55 residential .45 non- residential

_____ [(ETAF x _____) + (1-ETAF x _____)] =

MAWA

City of Solana Beach Invasive Plant Species List

Prohibited High Invasive Plant Species*	
Botanical name	Common name
<i>Aegilops triuncialis</i>	Barb Goat grass
<i>Alternanthera philoxeroides</i>	Alligator weed
<i>Ammophila arenaria</i>	European Beach grass
<i>Arundo donax</i>	Giant Reed
<i>Brassica tournefortii</i>	Sahara Mustard
<i>Bromus madritensis ssp. rubens</i>	Red Brome, Foxtail Chess
<i>Bromus tectorum</i>	Cheat grass, Downy Brome
<i>Centaurea maculosa</i> , <i>C.stoebe ssp. micranthos</i>	Spotted Knapweed
<i>Centaurea solstitialis</i>	Yellow Star Thistle
<i>Cortaderia jubata</i>	Pampas grass
<i>Cortaderia selloana</i>	Pampas grass
<i>Cytisus scoparius</i>	Scotch Broom, English Broom
<i>Delairea odorata</i>	Cape-Ivy, German Ivy
<i>Egeria densa</i>	Brazilian Egeria, Egeria
<i>Ehrharta calycina</i>	Purple Veldt grass
<i>Eichhornia crassipes</i>	Water Hyacinth
<i>Foeniculum vulgare</i>	Fennel, Sweet Fennel
<i>Genista monspessulana</i>	French Broom, Soft Broom
<i>Hydrilla verticillata</i>	Hydrilla, Water Thyme
<i>Lepidium latifolium</i>	Perennial Pepper weed
<i>Limnobia laevigatum</i>	South American Sponge Plant
<i>Ludwigia hexapetala</i>	Creeping Water primrose
<i>Ludwigia peploides</i>	Creeping Water primrose
<i>Lythrum salicaria</i>	Purple Loosestrife
<i>Myriophyllum aquaticum</i>	Parrot feather
<i>Myriophyllum spicatum</i>	Spike Watermilfoil
<i>Onopordum acanthium</i>	Scotch Thistle, Cotton Thistle
<i>Rubus armeniacus</i>	Blackberry
<i>Salvinia molesta</i>	Giant Salvinia, Karibaweed
<i>Sesbania punicea</i>	Scarlet Wisteria, Red Sesbania
<i>Spartina alterniflora x foliosa</i> , <i>S. alterniflora</i>	Smooth Cordgrass and Hybrids
<i>Spartina densiflora</i>	Dense-Flowered Cordgrass,
<i>Spartium junceum</i>	Spanish Broom
<i>Taeniatherum (Elymus) caput-medusae</i>	Medusahead
<i>Tamarix parviflora</i>	Smallflower Tamarisk
<i>Tamarix ramosissima</i> , <i>T. gallica</i> , <i>T. chinensis</i>	Salt cedar, Tamarisk
<i>Ulex europaeus</i>	Gorse, Common Gorse
Prohibited Moderate Invasive Plant Species*	
<i>Acacia dealbata</i>	Silver Wattle
<i>Acroptilon repens</i>	Russian Knapweed
<i>Ageratina adenophora</i>	Eupatory, Crofton weed
<i>Ailanthus altissima</i>	Tree-Of-Heaven

<i>Alhagi maurorum</i>	Camelthorn
<i>Anthoxanthum odoratum</i>	Sweet Grass, Vanilla Grass
<i>Arctotheca calendula</i>	Cape weed
<i>Asparagus asparagoides</i>	African Asparagus Fern
<i>Asphodelus fistulosus</i>	Onion Weed, Asphodel
<i>Atriplex semibaccata</i>	Australian Saltbush
<i>Avena barbata</i>	Slender Oat
<i>Avena fatua</i>	Wild Oats
<i>Brachypodium distachyon</i>	False Brome
<i>Brassica nigra</i>	Black Mustard
<i>Bromus diandrus</i>	Ripgut Brome, Great Brome
<i>Cardaria chalepensis, Lepidium chalepense</i>	Lens-Podded White top
<i>Cardaria (Lepidium) draba</i>	Heart podded Hoary Cress
<i>Carduus nutans</i>	Musk Thistle, Giant Plumeless
<i>Carduus pycnocephalus</i>	Italian Thistle
<i>Carpobrotus chilensis</i>	Sea-Fig, Iceplant
<i>Carthamus lanatus</i>	Woolly Thistle, Star thistle
<i>Centaurea calcitrapa</i>	Purple Star thistle
<i>Centaurea debeauxii, C.jacea nothosp. pratensis</i>	Meadow Knapweed
<i>Centaurea diffusa</i>	Diffuse Knapweed
<i>Centaurea melitensis</i>	Malta Star thistle
<i>Chondrilla juncea</i>	Skeleton Weed, Devil's Grass
<i>Chrysanthemum coronarium, Glebionis coronaria</i>	Crown Daisy
<i>Cirsium arvense</i>	Canada Thistle
<i>Cirsium vulgare</i>	Bull Thistle
<i>Conium maculatum</i>	Poison-Hemlock
<i>Cotoneaster franchetii</i>	Cotoneaster
<i>Cotoneaster pannosus</i>	Parney's Cotoneaster
<i>Cynara cardunculus</i>	Artichoke Thistle, Cardoon
<i>Cynodon dactylon</i>	Bermuda Grass
<i>Cynoglossum officinale</i>	Common Houndstongue
<i>Cynosurus echinatus</i>	Dogtail, Bristly Dogtail Grass
<i>Cytisus striatus</i>	Portuguese Broom
<i>Dipsacus fullonum</i>	Common Teasel, Wild Teasel
<i>Dipsacus sativus</i>	Fullers Teasel
<i>Dittrichia graveolens</i>	Stinkwort, Stinkweed
<i>Ehrharta erecta</i>	Panic Veldt Grass, Ehrharta
<i>Ehrharta longiflora</i>	Long-Flowered Veldt Grass
<i>Elaeagnus angustifolia</i>	Russian Olive, Oleaster
<i>Emex spinosa</i>	Spiny Devil's Thorn
<i>Erechtites (Senecio) glomerata</i>	Cutleaf Fireweed, Burnweed
<i>Euphorbia esula, E. virgata</i>	Leafy Spurge, Faitours-Grass
<i>Euphorbia terracina</i>	Carnation Spurge
<i>Festuca arundinacea</i>	Alta Fescue, Coarse Fescue
<i>Gazania linearis</i>	Gazania, Treasure Flower
<i>Glyceria declinata</i>	Mannagrass, Sweetgrass
<i>Halogeton glomeratus</i>	Halogeton
<i>Hirschfeldia incana</i>	Mediterranean Mustard
<i>Holcus lanatus</i>	Velvet Grass, Yorkshire Fog
<i>Hordeum marinum, H. murinum</i>	Mediterranean Barley
<i>Hypochaeris radicata</i>	Common Cat's-Ear

<i>Ilex aquifolium</i>	English Holly
<i>Isatis tinctoria</i>	Dyer's Woad
<i>Leucanthemum vulgare</i>	Ox-Eye Daisy, Dog Daisy
<i>Linaria genistifolia</i> ssp. <i>dalmatica</i>	Dalmatian Toadflax
<i>Linaria vulgaris</i>	Toadflax, Butter & Eggs
<i>Lolium multiflorum</i> , <i>Festuca perennis</i>	Italian Ryegrass
<i>Mentha pulegium</i>	Pennyroyal
<i>Mesembryanthemum crystallinum</i>	Crystalline Iceplant
<i>Myoporum laetum</i>	Ngaio Tree, False Sandalwood
<i>Nicotiana glauca</i>	Tree Tobacco
<i>Oxalis pes-caprae</i>	Buttercup Oxalis
<i>Phalaris aquatica</i>	Harding Grass, Canary Grass
<i>Polygonum cuspidatum</i> , <i>Fallopia japonica</i>	Japanese Knotweed
<i>Polygonum sachalinense</i> , <i>Fallopia sachalinensis</i>	Giant Or Sakhalin Knotweed
<i>Potamogeton crispus</i>	Curly-Leaved Pondweed
<i>Retama monosperma</i> , <i>Genista monosperma</i>	Bridal Veil Broom
<i>Rumex acetosella</i>	Sheep Sorrel
<i>Saccharum ravennae</i>	Ravenna Grass
<i>Salsola soda</i>	Russian Thistle, Glasswort
<i>Sapium sebiferum</i> , <i>Triadica sebifera</i>	Chinese Tallow Trees
<i>Sisymbrium irio</i>	London Rocket
<i>Spartina anglica</i>	English Cordgrass
<i>Stipa capensis</i>	Cape Rice Grass
<i>Tanacetum vulgare</i>	Tansy Golden Buttons
<i>Torilis arvensis</i>	Hedge Parsley
<i>Vulpia myuros</i> , <i>Festuca myuros</i>	Red-Tailed Fescue
<i>Zostera japonica</i>	Japanese Eelgrass
Prohibited Limited Invasive Plant Species*	
<i>Acacia melanoxylon</i>	Blackwood Acacia
<i>Agrostis avenacea</i>	Pacific Bent Grass
<i>Agrostis stolonifera</i>	Carpet Bent
<i>Bassia hyssopifolia</i>	Five-Horn Smother Weed
<i>Bellardia trixago</i>	Bellardia
<i>Brassica rapa</i>	Turnip, Field Mustard
<i>Briza maxima</i>	Quaking or Rattlesnake Grass
<i>Bromus hordeaceus</i>	Soft Brome, Soft
<i>Bromus japonicus</i>	Japanese Brome,
<i>Cakile maritima</i>	European Sea Rocket
<i>Cardaria pubescens</i> , <i>Lepidium appelianum</i>	Hairy White Top
<i>Carduus acanthoides</i>	Plumeless Thistle, Bristly Thistle
<i>Carduus tenuiflorus</i>	Italian Thistle
<i>Conicosia pugioniformis</i>	False Iceplant
<i>Cotula coronopifolia</i>	Common Brass Buttons
<i>Crataegus monogyna</i>	English Hawthorn
<i>Crupina vulgaris</i>	Common Crupina
<i>Dactylis glomerata</i>	Orchard Grass
<i>Descurainia sophia</i>	Flixweed, Tansy Mustard
<i>Erodium cicutarium</i>	Filaree, Redstem Filaree
<i>Euphorbia oblongata</i>	Eggleaf Spurge, Oblong Spurge

<i>Geranium dissectum</i>	Cutleaf Geranium
<i>Helichrysum petiolare</i>	Licorice Plant
<i>Hypochaeris glabra</i>	Smooth Cat's-Ear
<i>Kochia scoparia</i>	Kochia, Belvedere
<i>Limonium ramosissimum ssp. provinciale</i>	Algerian Sea Lavender
<i>Lythrum hyssopifolium</i>	Hyssop Loosestrife
<i>Marrubium vulgare</i>	Horehound, White Horehound
<i>Medicago polymorpha</i>	California Burclover, Bur medic
<i>Ononis alopecuroides</i>	Foxtail Restharrow
<i>Parentucellia viscosa</i>	Yellow Gland Weed
<i>Pennisetum clandestinum</i>	Kikuyu Grass
<i>Phytolacca americana</i>	Common Pokeweed
<i>Picris echioides, Helminthotheca echioides</i>	Bristly Ox-Tongue
<i>Piptatherum miliaceum, Stipa miliacea miliacea</i>	Smilo Grass, Bamboo Grass
<i>Plantago lanceolata</i>	English Plantain
<i>Poa pratensis</i>	Kentucky Bluegrass
<i>Polypogon monspeliensis</i>	Beardgrass
<i>Prunus cerasifera</i>	Purple Leaf Plum
<i>Ranunculus repens</i>	Creeping Buttercup
<i>Raphanus sativus</i>	Wild Radish
<i>Ricinus communis</i>	Castor Bean
<i>Rumex crispus</i>	Curly Dock
<i>Rytidosperma penicillatum</i>	Hairy Wallaby Oat Grass
<i>Salsola paulsenii</i>	Russian Thistle
<i>Salsola tragus</i>	Common Saltwort
<i>Salvia aethiopis</i>	Mediterranean/ African Sage
<i>Saponaria officinalis</i>	Bouncing-Bet, Bouncing Betty
<i>Schismus arabicus, S. barbatus</i>	Split-Grass
<i>Senecio jacobaea</i>	Ragwort, Stinking Willie
<i>Silybum marianum</i>	Variegated Milk Thistle
<i>Sinapis arvensis</i>	Wild Mustard, Canola
<i>Spartina patens</i>	Salt Marsh Hay
<i>Stipa manicata</i>	Andean Tussockgrass
<i>Tamarix aphylla</i>	Athel, Athel Pine
<i>Tetragonia tetragonioides</i>	Warrigal Greens
<i>Trifolium hirtum</i>	Rose Clover
<i>Undaria pinnatifida</i>	Japanese Kelp, Wakame
<i>Verbascum thapsus</i>	Wooly Mullein

*The plants in the "High", "Moderate" and "Limited" lists above are from the California Invasive Plant Council. <http://www.cal-ipc.org/>

The following plant species are highly discouraged and may be planted only at the discretion and approval of the Community Development Director. If additional species are added to the California Invasive Plant Council list, the Community Development Director may modify this list to include them.

<i>Carpobrotus edulis</i>	Highway Ice Plant
<i>Cordyline australis</i>	Cordyline
<i>Crocasmia x crocosmiiflora</i>	Montbretia

<i>Digitalis purpurea</i>	Foxglove
<i>Echium candicans</i>	Pride-Of-Madeira
<i>Erica lusitanica</i>	Spanish or Portuguese Heath
<i>Eucalyptus camaldulensis</i>	Red Gum
<i>Eucalyptus globulus</i>	Blue Gum
<i>Ficus carica</i>	Edible Fig
<i>Hedera helix, Hedera canariensis</i>	English Ivy, Algerian Ivy
<i>Hypericum canariense</i>	Canary Island St. Johnswort
<i>Iris pseudacorus</i>	Yellowflag Iris
<i>Lobularia maritima</i>	Sweet Alyssum
<i>Myosotis latifolia</i>	Forget-Me-Not
<i>Nassella (Stipa) tenuissima</i>	Mexican Feather Grass
<i>Olea europaea</i>	Olive
<i>Pennisetum setaceum</i>	Crimson/Purple Fountain Grass
<i>Phoenix canariensis</i>	Date Palm
<i>Pyracantha angustifolia, crenulata, coccinea</i>	Pyracantha, Firethorn
<i>Schinus molle</i>	California Pepper
<i>Schinus terebinthifolius</i>	Brazilian Pepper
<i>Robinia pseudoacacia</i>	Black Locust
<i>Tropaeolum majus</i>	Nasturtium
<i>Vinca major</i>	Periwinkle
<i>Washingtonia robusta</i>	Mexican Fan Palm
<i>Watsonia meriana</i>	Watsonia
<i>Zantedeschia aethiopica</i>	Calla Lily



CERTIFICATION OF COMPLETION OF LANDSCAPE INSTALLATION

Project Name: _____

Permit Address: _____

Permit Number: _____

I certify that I have inspected the planting and irrigation system and that:

- 1) All landscape work has been installed and completed per the plans and specifications approved by the City of Solana Beach;***
- 2) All required soil amendments were incorporated;***
- 3) The installed irrigation system is functioning as designed and approved;***
- 4) The irrigation control system was properly programmed in accordance with the irrigation schedule;***
- 5) A copy of the hydro-zone chart is mounted in the controller box; and***
- 6) The person operating the system has received all required maintenance and irrigation plans.***

Project Landscape Architect or Professional of Record

Date

License Number and Expiration Date: _____

Firm Name: _____

Phone number: _____

Following receipt of this Certification of Completion by the City, a final review of the installation will be performed by the City.

Call the Planning Department at 858-720-2440 to schedule the inspection.

Inspection Contact Name: _____

Phone Number: _____

Contactor Firm Name: _____

If not previously submitted to the City the following must be provided:

Irrigation scheduling, schedule of landscape and irrigation maintenance, soil's management report and "as-built" plans (if changes have been made from the approved plans).