



# Landscape Manual

January 2016

City of Solana Beach

Community Development Department

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## **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	Conceptual Plan Review	Construction Plan Review	Landscape Inspection	15% City admin fee	Total
(A) 8,000 SF or less	\$875	\$875	\$750	\$375	\$2,875
(B) 8,001 SF - 20,000 SF	\$1,000	\$1,250	\$875	\$468.75	\$3,593.75
(C) 20,001 SF - 40,000 SF	\$1,250	\$1,625	\$1,000	\$581.25	\$4,456.25
(D) 40,001 SF - 100,000 SF	\$1,500	\$2,000	\$1,125	\$693.75	\$5,318.75
(E) 100,001 SF - 200,000 SF	\$1,750	\$2,250	\$1,250	\$787.50	\$6,037.50
(F) 200,001 SF - 400,000 SF	\$1,875	\$2,625	\$1,250	\$862.50	\$6,612.50
(G) 400,001 SF or more	\$2,000	\$3,125	\$1,375	\$975	\$7,475

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>
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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 - <b>ETWU</b> (gallons per year) Total shall not exceed MAWA below	10					
<b>A</b> <i>ETo - Evapotranspiration rate =</i> 41 (west of I-5) 47 (east of I-5)	<b>B</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	<b>C</b> <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

$\frac{\text{25.42 or 29.14}}{\text{Total Landscape Area}} \left[ (\text{ETAF} \times \text{Total Landscape Area}) + (1 - \text{ETAF} \times \text{Total SLA}) \right] =$	<b>MAWA</b>
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## City of Solana Beach Invasive Plant Species List

<b>Prohibited High Invasive Plant Species*</b>	
<b>Botanical name</b>	<b>Common name</b>
<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>Limnobiium 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, 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, T. gallica, T. chinensis</i>	Salt cedar, Tamarisk
<i>Ulex europaeus</i>	Gorse, Common Gorse
<b>Prohibited Moderate Invasive Plant Species*</b>	
<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 ssp. dalmatica</i>	Dalmatian Toadflax
<i>Linaria vulgaris</i>	Toadflax, Butter & Eggs
<i>Lolium multiflorum, 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, Fallopia japonica</i>	Japanese Knotweed
<i>Polygonum sachalinense, Fallopia sachalinensis</i>	Giant Or Sakhalin Knotweed
<i>Potamogeton crispus</i>	Curly-Leaved Pondweed
<i>Retama monosperma, 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, 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, Festuca myuros</i>	Red-Tailed Fescue
<i>Zostera japonica</i>	Japanese Eelgrass
<b>Prohibited Limited Invasive Plant Species*</b>	
<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, 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 aethiopsis</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>Crocsmia 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).

## ORDINANCE 467

### AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SOLANA BEACH, CALIFORNIA, AMENDING THE WATER EFFICIENT LANDSCAPE REGULATIONS SECTION 17.56 OF THE SOLANA BEACH MUNICIPAL CODE

**WHEREAS**, the City reviews and periodically updates its regulations to ensure that sustainable and best management practices in water conservation and landscape management are implemented; and

**WHEREAS**, in 2006, the State of California adopted the Water Conservation in Landscaping Act (Assembly Bill 1881) Government Code Sections 65591 et seq. to provide for greater efforts at water conservation and more efficient use of water in landscaping; and

**WHEREAS**, in 2008, the California Department of Water Resources (DWR) prepared a Model Water Efficient Landscape Ordinance (MWELo) for cities to use in updating their landscaping requirements; and

**WHEREAS**, on March 23, 2011, 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; and

**WHEREAS**, on January 17, 2014, Governor Brown proclaimed a State of Emergency to exist throughout the State of California due to severe drought conditions; and

**WHEREAS**, 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 updated Water Efficient Landscape Regulations increase water efficiency standards for new and existing landscapes through more efficient irrigation systems, greywater usage, onsite storm water capture, and by limiting the portion of landscapes that can be covered in turf. Executive Order B-29-15 requires reporting on the implementation and enforcement of local ordinances, with required reports due by December 31, 2015.

**WHEREAS**, the City reviewed the State MWLEO for applicability to development within the coastal community of Solana Beach and proposes certain amendments to the MWLEO which are equivalent to, or more restrictive than, the State regulations; and

**WHEREAS**, this ordinance implements Executive Order B-29-15 and the provisions of this ordinance are equivalent to, or at least as effective in, conserving water as the provisions of the State MWELo; and

**WHEREAS**, this ordinance will increase water use efficiently by establishing water budgets, promoting installation and maintenance of efficient irrigation systems, encouraging use of plants that use water efficiently based on climate, soil type and site features and reduce water waste that occurs from irrigation runoff and overspray; and

**WHEREAS**, adoption of the Water Efficient Landscape Ordinance is exempt under the California Environmental Quality Act, Section 15308; and

**WHEREAS**, adoption of the Water Efficient Landscape Ordinance is consistent with the General Plan. It will implement the Conservation Elements goal, objectives and policies to maintain an adequate domestic water supply for all residents and conserve and recycle important resources.

**NOW THEREFORE**, the City Council of the City of Solana Beach does ordain as follows:

Chapter 17.56 of the Solana Beach Municipal Code is hereby amended to read as follows:

## **Chapter 17.56**

### **WATER EFFICIENT LANDSCAPE REGULATIONS**

Sections:

- 17.56.010 Purpose.
- 17.56.020 Findings.
- 17.56.030 Definitions.
- 17.56.040 Applicability.
- 17.56.050 Landscape approval.
- 17.56.060 Administration and landscape manual.
- 17.56.070 Landscape documentation package.
- 17.56.080 Soil management report.
- 17.56.090 Planting and irrigation plans.
- 17.56.100 Water conservation plan.
- 17.56.110 Grading design plan.
- 17.56.120 Irrigation schedule.
- 17.56.130 Maximum applied water allowance (MAWA).
- 17.56.140 Estimated total water use (ETWU).
- 17.56.150 Adjustment to landscaped area for non-vegetated area.
- 17.56.160 New single-family residential projects with limited landscaping.
- 17.56.170 Cemeteries.
- 17.56.180 Regulations applicable to use of turf.
- 17.56.190 Projects with model homes.
- 17.56.200 Recycled water.
- 17.56.210 Landscaping and irrigation installation.
- 17.56.220 Landscaping and irrigation maintenance.

- 17.56.230 Certificate of completion.
- 17.56.240 Water waste prevention.
- 17.56.250 Irrigation Audit.
- 17.56.260 Violations.
- 17.56.270 Enforcement.
- 17.56.280 Fees.

**17.56.010 Purpose.**

The State Legislature determined in the Water Conservation in Landscaping Act (the "Act"), Government Code Sections 65591 et seq., that the state's water resources are in limited supply. The Legislature also recognized that while landscaping is essential to the quality of life in California, landscape design, installation, maintenance and management must be water efficient. The general purpose of this chapter is to establish water use standards for landscaping in the city that implement the 2006 development landscape design requirements established by the Act and amended by Executive Order No. B-29-15. Consistent with the Legislature's findings, the purpose of this chapter is to:

A. Promote the values and benefits of landscaping practices that integrate and go beyond the conservation and efficient use of water.

B. Establish a structure for planning, designing, installing, maintaining and managing water efficient landscapes in new construction and rehabilitated projects by encouraging the use of a watershed approach that requires cross-sector collaboration of industry, government and property owners to achieve the many benefits possible.

C. Promote the use, when available, of tertiary treated recycled water, for irrigating landscaping.

D. Use water efficiently without waste by setting a maximum applied water allowance (MAWA) as an upper limit for water use and reduce water use for landscaping to the lowest practical amount.

E. Encourage water users of existing landscapes to use water efficiently and without waste.

F. Landscapes that are planned, designed, installed, managed and maintained with the watershed based approach can improve California's environmental conditions and provide benefits and realize sustainability goals. Such landscapes will make the urban environment resilient in the face of climatic extremes. Consistent with the legislative findings and purpose of the Ordinance, conditions in the urban setting will be improved by:

1. Creating the conditions to support life in the soil by reducing compaction, incorporating organic matter that increases water retention, and promoting productive plant growth that leads to more carbon storage, oxygen production, shade, habitat and esthetic benefits.

2. Minimizing energy use by reducing irrigation water requirements, reducing reliance on petroleum based fertilizers and pesticides, and planting climate appropriate shade trees in urban areas.

3. Conserving water by capturing and reusing rainwater and graywater wherever possible and selecting climate appropriate plants that need minimal supplemental water after establishment.

4. Protecting air and water quality by reducing power equipment use and landfill disposal trips, selecting recycled and locally sourced materials, and using compost, mulch and efficient irrigation equipment to prevent erosion.

5. Protecting existing habitat and creating new habitat by choosing local native plants, climate adapted non-natives and avoiding invasive plants. Utilizing integrated pest management with least toxic methods as the first course of action.

#### **17.56.020 Findings.**

This chapter implements the Water Conservation in Landscaping Act. The requirements of this chapter reduce water use associated with irrigation of outdoor landscaping by setting a maximum amount of water to be applied to landscaping and by designing, installing and maintaining water efficient landscapes consistent with the water allowance. The provisions of this chapter are equivalent to or at least as effective, where deviations have been made, to the provisions of the State Model Water Efficient Landscape Ordinance and Executive Order No. B-29-15.

The requirements herein are intended to reduce water usage in Solana Beach to the same extent as the Model Landscape Ordinance prepared by the state of California and Executive Order No. B-29-15. In implementing this law, the city shall endeavor to apply the law in a manner which will result in long-term water savings to the citizens of the state as required by law. The water savings shall be achieved through permanent landscape rules using irrigation management, greater use of drought-tolerant plantings and improved design criteria.

In adopting this chapter, the city council finds and determines that this chapter will be as effective as the State Model Landscape Ordinance and Executive Order No. B-29-15.

#### **17.56.030 Definitions.**

The following definitions shall apply to this chapter:

A. "Automatic irrigation controller" means an automatic timing device used to remotely control valves that operate an irrigation system. Automatic irrigation controllers are able to self-adjust and shall schedule irrigation events using either evapotranspiration (ET<sub>o</sub>) (weather-based) or moisture sensor data.

B. "Building permit" means a permit to engage in a certain type of construction on a specific location.

C. "Certified landscape irrigation auditor" means a person certified to perform landscape irrigation audits by an accredited academic institution, a professional trade organization or other accredited certification program.

D. "Compost" means the safe and stable product of controlled biologic decomposition of organic materials that is beneficial to plant growth.

E. "Developer" means a person who seeks or receives permits for or who undertakes land development activities, who is not a single-family homeowner. "Developer" includes a developer's partner, associate, employee, consultant, trustee or agent.

F. "Director" means the community development director or anyone who the director has designated or hired to administer or enforce this chapter.

G. "Discretionary permit" means any permit requiring a decision making body to exercise judgment prior to its approval, conditional approval or denial.

H. "Distribution uniformity" means the measure of the uniformity of irrigation water over a defined area.

I. "Estimated total water use" (ETWU) means the estimated total water use in gallons per year for a landscaped area.

J. "ET adjustment factor" (ETAF) means a factor of 0.55 for residential areas and 0.45 for non-residential areas, that, when applied to reference ETo, adjusts for plant water requirements and irrigation efficiency, two major influences on the amount of water that is required for a healthy landscape. The ETAF for a new and existing (non-rehabilitated) Special Landscape Areas shall be 1 minus the factor.

K. "Evapotranspiration" (ETo) means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time period. "Reference evapotranspiration" means a standard measurement of environmental parameters which affect the water use of plants. ETo is given in inches per day, month, or year and is an estimate of the ETo of a large field of four inches to seven inches tall, cool season turf that is well watered. Reference ETo is used as the basis of determining the MAWA so that regional differences in climate can be accommodated.

L. "Flow sensor" means an inline device installed at the supply point of the irrigation system that produces a repeatable signal proportional to flow rate. Flow sensors must be connected to an automatic irrigation controller, or flow monitor capable of receiving flow signals and operating master valves. This combination flow sensor/controller may also function as a landscape water meter or sub-meter.

M. "Friable" means a soil condition that is easily crumbled or loosely compacted down to a minimum depth per planting material requirements, whereby the root structure of newly planted material will be allowed to spread unimpeded.

N. "Fuel Modification Plan Guideline" means guidelines from a local fire authority to assist residents and businesses that are developing land or building structures in a fire hazard severity zone.

O. "Graywater" means untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. "Graywater" includes, but is not limited to, wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers (Health and Safety Code Section 17922.12).

P. "Hardscape" means any durable surface material, pervious or nonpervious.

Q. "Hydro-zone" means a portion of the landscape area having plants with similar water needs and rooting depth. A hydro-zone may be irrigated or non-irrigated.

R. "Invasive species" means species of plants not historically found in California that spread outside cultivated areas and may damage environmental or economic resources. Invasive species may be regulated by county agricultural agencies as noxious species. Lists of invasive plants are maintained at the California Invasive Plant Inventory and USDA invasive and noxious weeds database.

S. "Irrigation audit" means an inspection which includes an in depth evaluation of the performance of an irrigation system conducted by a certified landscape irrigation auditor. An irrigation audit may include, but is not limited to, inspection, system tune up, system test with distribution uniformity or emission uniformity, reporting overspray or

runoff that causes overland flow and preparation of an irrigation schedule. The audit must be conducted in a manner consistent with the Irrigation Association's Landscape Irrigation Auditor Certification program or other U.S. Environmental Protection Agency "Watersense" labeled auditing program.

T. "Irrigation efficiency" means the measurement of the amount of water beneficially used divided by the water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The irrigation efficiency factors are 0.55 for overhead spray devices, 0.75 for MP rotators, 0.70 for rotors, 0.75 for bubblers, and 0.81 for drip systems.

U. "Landscaped area" means an area with outdoor plants, turf and other vegetation. A landscaped area includes a water feature either in an area with vegetation or that stands alone. A landscaped area may also include design features adjacent to an area with vegetation when allowed under SBMC 17.56.150-15. A landscaped area does not include the footprint of a building, decks, patio, sidewalk, driveway, parking lot or other hardscape that does not meet the criteria in SBMC 17.56.150-15. A landscaped area also does not include an area without irrigation designated for nondevelopment such as designated open space or area with existing native vegetation.

V. "Landscape design manual" means the manual approved by city that establishes specific design criteria and guidance to implement the requirements of this chapter.

W. "Landscape water meter" means an inline device installed at the irrigation supply point that measures the flow of water into the irrigation system and is connected to a totalizer to record water use.

X. "Licensed" means licensed by the state of California.

Y. "Low head drainage" means a sprinkler head or other irrigation device that continues to emit water after the water to the zone in which the device is located has shut off.

Z. "Low volume irrigation" means the application of irrigation water at low pressure through a system of tubing or lateral lines and low volume emitters such as drip lines or bubblers.

AA. "Master shut-off valve" is an automatic valve installed at the irrigation supply point which controls water flow into the irrigation system. When this valve is closed water will not be supplied to the irrigation system. A master valve will greatly reduce any water loss due to a leaky station valve.

BB. "Maximum applied water allowance" (MAWA) means the maximum allowed annual water use for a specific landscaped area based on the square footage of the area, the ETAF and the reference ETo.

CC. "Mulch" means an organic material such as leaves, bark, straw or inorganic mineral materials such as rocks, gravel or decomposed granite left loose and applied to the soil surface to reduce evaporation, suppress weeds, moderate soil temperature or prevent soil erosion.

DD. "Non-residential landscape" means landscapes in commercial, institutional, industrial and public settings that may have areas designated for recreation or public assembly. It also includes portions of common areas of common interest developments with designated recreational areas.

EE. "Overspray" means the water from irrigation that is delivered outside an area targeted for the irrigation and makes contact with a surface not intended to be irrigated.

FF. "Pervious" means any surface or material that allows the passage of water through the material and into underlying soil.

GG. "Plant factor" means a factor that, when multiplied by the ETo, estimates the amount of water a plant needs. For purposes of this ordinance, the following plant factors shall apply: very low water use plants - 0.1; low water use plants - 0.3; moderate water use plants - 0.6; high water use plants - 1.0.

HH. "Public water purveyor" means a public utility, municipal water district, municipal irrigation district or municipality that delivers water to customers.

II. "Recycled water" means wastewater that has been treated at the highest level required by the California Department of Health Services for water not intended for human consumption. "Tertiary treated recycled water" means water that has been through three levels of treatment including filtration and disinfection.

JJ. "Runoff" means water that is not absorbed by the soil or landscape to which it is applied and flows from the landscaped area.

KK. "Special landscaped area" means an area of the landscape dedicated to edible plants, recreational areas, an area irrigated with recycled water, or water features using recycled water.

LL "Sub-meter" means a metering device to measure water applied to the landscape that is installed after the primary utility water meter.

MM. "Subsurface irrigation" means an irrigation device with a delivery line and water emitters installed below the soil surface that slowly and frequently emit small amounts of water into the soil to irrigate plant roots.

NN. "Transitional area" means a portion of a landscaped area that is adjacent to a natural or undisturbed area and is designated to ensure that the natural area remains unaffected by plantings and irrigation installed on the property.

OO. "Turf" means a groundcover surface of mowed grass.

PP. "Water feature" means a design element where open water performs an aesthetic or recreational function. A water feature includes a pond, lake, waterfall, fountain, artificial streams, spa and swimming pool. Constructed wetlands used for on-site wastewater treatment or stormwater best management practices are not water features.

QQ. "WUCOLS" means the Water Use Classification of Landscape Species published by the University of California Cooperative Extension and the Department of Water Resources 2014.

#### **17.56.040 Applicability.**

A. After December 1, 2015, and consistent with Executive Order No. B-29-15, this chapter shall apply to the following projects:

1. 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;

2. 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;

3. A cemetery under limited requirements in SBMC 17.56.170.

B. For projects using treated or untreated graywater or rainwater captured on site, any lot or parcel within the project that has less than 2500 square feet of landscape and meets the lot or parcel's landscape water requirement (Estimated Total Water Use) entirely with treated or untreated graywater or through stored rainwater will not be required to provide irrigation audits per Section 17.56.250.

C. This chapter shall not apply to the following:

1. A registered local, state or federal historical site.

2. An ecological restoration project that does not require a permanent irrigation system.

3. A mined land reclamation project that does not require a permanent irrigation system.

4. Existing plant collections, as part of a botanical garden or arboretum, open to the public.

#### **17.56.050 Landscape approval.**

A. No person shall install landscaping for a project subject to this chapter without the review and approval required by this chapter.

B. A person constructing a project subject to the requirements of this chapter shall obtain approval for the landscaped area as follows:

1. A person applying for a building permit for a single-family residence shall obtain an approval of the landscaping from the city as part of the permitting process.

2. A person applying for a discretionary permit described in SBMC 17.56.040:

a. Shall submit a landscape concept plan as required by the discretionary permit application. The concept plan shall include representation of the site features, proposed planting plan areas and a water conservation plan. The planting plan shall indicate the species (common and botanical plant name) and location of all existing and proposed plantings, installation size, height at maturity, and WUCOLS value for each plant used. The water conservation plan shall on a graphic plan define hydro-zones for all planting areas, with an indication of the type of irrigation to be used by hydro-zone. An estimated water use calculation shall be prepared using the City's standard form.

b. Shall obtain approval for landscaping as part of the permitting process for each building permit for each project.

c. May use "typical" plans for developer-installed landscaping for single-family homes.

#### **17.56.060 Administration and landscape manual.**

A. The director shall administer and enforce this chapter and shall have the authority to develop a landscape manual that provides development standards and design guidelines.

#### **17.56.070 Landscape documentation package.**

A. Except as provided in subsection B of this section building permit applications for projects subject to SBMC 17.56.040 shall include a landscape documentation package that complies with the provisions of this chapter and with the landscape design manual.

B. An applicant for a building permit for a single-family residence with a landscaped area less than 500 square feet is not required to submit a landscape documentation package with the permit application, but shall comply with SBMC 17.56.160. An applicant for a permit for a cemetery is not required to submit a landscape documentation package, but shall comply with SBMC 17.56.170.

C. The landscape documentation package required by subsection A of this section shall contain the following:

1. A soil management report and plan that complies with SBMC 17.56.080 that analyzes the soil within each landscaped area of the project and makes recommendations regarding soil additives.

2. Planting and irrigation plans that comply with SBMC 17.56.090 that describe the landscaping and irrigation for the project.

3. A water conservation plan that complies with SBMC 17.56.100 that calculates the MAWA and the ETWU for the project using the City's standard form.

4. A grading design plan that complies with SBMC 17.56.110 that describes the grading of the project. If the project applicant has submitted a grading plan with the application for the project, the director may accept that grading plan in lieu of the grading design plan required by this subsection if the grading plan complies with SBMC 17.56.110.

#### **17.56.080 Soils management report.**

A. The soils management report required by SBMC 17.56.070 shall be prepared by a licensed landscape architect, licensed civil engineer, licensed architect, or other landscape professional licensed by the state to do this work and shall contain the following information:

1. An analysis of the soil for the proposed landscaped areas of the project that includes information about the soil texture, soil infiltration rate, pH, total soluble salts, sodium, and percent organic matter.

2. Recommendations about soil amendments that may be necessary to foster plant growth and plant survival in the landscaped area using efficient irrigation techniques.

3. In projects with multiple landscape installations (i.e. single-family subdivision), a soil sampling rate of 1 in 7 lots or approximately 15 percent will satisfy this requirement. Large landscape projects shall sample at a rate equivalent to 1 in 7 lots.

B. When a project involves mass grading of a site the applicant shall submit the soil management report that complies with subsection A of this section with the certificate of completion required by SBMC 17.56.230.

C. The soils management report shall include information regarding proposed soil amendments and mulch:

1. The report shall identify the type and amount of mulch for each area where mulch is applied. A minimum three-inch layer of mulch shall be applied on all exposed soil surfaces in each landscaped area except in turf areas, creeping or rooting ground covers or direct seeding applications where mulch is contraindicated. Highly flammable mulch material shall not be used.

2. Compost at a rate of a minimum of four cubic yards per 1,000 square feet of permeable area shall be incorporated to a depth of six inches into the soil. Soils with greater than 6 percent organic matter in the top six inches of the soil are exempt from adding compost and tilling.

3. The mulching portion of seed/mulch slurry in hydro-seeded applications shall comply with subsection A of this section.

**17.56.090 Planting and irrigation plans.**

A. The planting and irrigation plans required by SBMC 17.56.070 shall be prepared by a licensed landscape architect, licensed civil engineer, licensed architect, or other landscape professional licensed by the state to do this work. The plans shall:

1. Include the MAWA for the plans, including the calculations used to determine the MAWA. The calculations shall be based on the formula in SBMC 17.56.130.

2. Include the ETWU for the plans, including the calculations used to determine the ETWU. The calculations shall be based on the formula in SBMC 17.56.140.

3. Include a statement signed under penalty of perjury by the person who prepared the plan that provides:

"I am familiar with the requirements for landscape and irrigation plans contained in the City's Water Efficient Landscape Regulations. I have prepared this plan in compliance with those regulations and the Landscape Design Manual. I certify that the plan implements those regulations to provide efficient use of water."

4. Demonstrate compliance with best management practices required by Chapter 13.10 SBMC.

5. Address fire safety issues and demonstrate compliance with applicable requirements for defensible space around buildings and structures and shall avoid the use of fire prone vegetation.

B. The planting plan shall meet the following requirements:

1. The plan shall include a list of all vegetation, by common and botanical plant name, which exists in the proposed landscaped area. The plan shall state what vegetation will be retained and what will be removed.

2. The plan shall include a list of all vegetation, by common and botanical plant name, which will be added to each landscaped area. Invasive plant species shall be highly discouraged. It shall indicate the species and location of all proposed plantings, installation size, height at maturity, and WUCOLS value for each plant used. The plan shall include the total quantities by container size and species. If the applicant intends to plant seeds, the plan shall describe the seed mixes and applicable purity and germination specifications. Any invasive plant species listed on the Invasive Plant Species list found in the Landscape Manual for Solana Beach is prohibited, except where noted on the list.

3. The plan shall include a detailed description of each water feature that will be included in the landscaped area.

4. The plan shall delineate and provide detailed descriptions of all paths, walkways, hardscape areas, decks, and overhead structures.

5. All plants shall be grouped in hydro-zones and the irrigation shall be designed to deliver water to hydro-zones based on the moisture requirements of the plant grouping. A hydro-zone may mix plants of moderate and low water use or mix plants of

high water use with plants of moderate water use. No high water use plants shall be allowed in a low water use hydro-zone. The plan shall also demonstrate how the plant groupings accomplish the most efficient use of water.

6. The plan shall identify areas permanently and solely dedicated to edible plants.

7. The plan shall avoid the use of landscaping with known surface root problems adjacent to a paved area, unless the plan provides for installation of root control barriers or other appropriate devices to control surface roots.

8. Plants in a transitional area shall consist of a combination of site adaptive and compatible native and/or nonnative species. Invasive species are highly discouraged from being introduced or tolerated in a transitional area. The irrigation in a transitional area shall be designed so that no overspray or runoff shall enter an adjacent area that is not irrigated. Any invasive plant species listed on the Invasive Plant Species list found in the Landscape Manual for Solana Beach is prohibited, except where noted on the list.

9. On a project other than a single-family residence, the plan shall identify passive and active recreational areas.

10. Reinforced straw matting shall be applied on all slopes.

C. The irrigation plan shall meet the following requirements:

1. The plan shall show the location, type and size of all components of the irrigation system that will provide water to the landscaped area, including the controller, water lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, pressure regulators, and backflow prevention devices.

2. A separate water meter or sub-meter for landscape irrigation shall be installed for all projects with an aggregate landscape area of 1,000 square feet or greater, with the exception of single family residential projects.

3. Rain sensors, either integral or auxiliary, shall be installed on all irrigation systems.

4. Flow sensors that detect high-flow conditions created by system damage or malfunction shall be installed with a master valve shut off on all projects, with the exception of single family residential projects.

5. Overhead irrigation shall not be permitted within 24 inches of any non-permeable surface.

6. Narrow or irregularly shaped areas, less than ten (10) feet in width in any direction shall be irrigated with subsurface irrigation.

7. Overhead irrigation shall not be permitted in any area with a grade less steep than 4:1 except turf areas and bio-retention areas.

8. Overhead irrigation shall be prohibited between the hours of 10:00am and 8:00pm.

9. The plan shall show the static water pressure at the point of connection to the public water supply and the flow rate in gallons, the application rate in inches per hour and the design operating pressure in pressure per square inch for each station.

10. The irrigation system shall be designed to prevent runoff, overspray, low head drainage and other similar conditions where irrigation water flows or sprays onto areas not intended for irrigation. The plan shall also demonstrate how grading and drainage techniques promote healthy plant growth and prevent erosion and runoff.

11. The plan shall identify each area irrigated with recycled water.

12. The plan shall provide that any slope greater than 25 percent will be irrigated with an irrigation system with a precipitation rate of 0.75 inches per hour or less to prevent runoff and erosion. As used in this chapter, 25 percent grade means one foot of vertical elevation change for every four feet of horizontal length. An applicant may employ an alternative design if the plan demonstrates that no runoff or erosion will occur.

13. The plan shall provide that all wiring and piping under a paved area that a vehicle may use, such as a parking area, driveway or roadway, will be installed inside a PVC conduit.

14. The plan shall provide that irrigation piping and irrigation devices that deliver water, such as sprinkler heads, shall be installed below grade if they are within 24 inches of a vehicle or pedestrian use area. The director may allow on-grade piping where landform constraints make below grade piping infeasible.

15. The irrigation system shall provide for the installation of a manual shutoff valve as close as possible to the water supply. Additional manual shutoff valves shall be installed between each zone of the irrigation system and the water supply.

16. The irrigation system shall provide that irrigation for any landscaped area will be regulated by an automatic irrigation controller.

17. The irrigation system shall be designed with a landscape irrigation efficiency necessary to meet the MAWA.

18. The plan shall describe each automatic irrigation controller the system uses to regulate the irrigation schedule and whether it is a weather-based system or moisture detection system. The plan shall depict the location of electrical service for the automatic irrigation controller or describe the use of batteries or solar power that will power valves or a smart controller.

#### **17.56.100 Water conservation plan.**

The water efficient landscape worksheet required by SBMC 17.56.070 shall be prepared by a licensed landscape architect, licensed civil engineer, licensed architect, or other landscape professional licensed by the state to do this work and shall contain the following:

A. Information on the plant factor, irrigation method, irrigation efficiency, and area associated with each hydro-zone. Calculations shall be made to show that the evapotranspiration adjustment factor (ETAF) for the landscape project does not exceed a factor of 0.55 for residential areas and 0.45 for non-residential areas, exclusive of Special Landscape Areas. The ETAF for a landscape project is based on the plant factors and irrigation methods selected. The Maximum Applied Water Allowance is calculated based on the maximum ETAF allowed (0.55 for residential areas and 0.45 for non-residential areas) and expressed as annual gallons required. The Estimated Total Water Use (ETWU) is calculated based on the plants used and irrigation method selected for the landscape design. ETWU must be below the MAWA.

B. Water budget calculations, which shall meet the following requirements:

1. The calculations for the ETWU and MAWA shall be prepared and submitted on the City's standard form.

2. A plan graphic shall be provided defining all hydro-zones and numbered to correspond to the hydro-zones on the ETWU calculation form.

3. The plant factor used shall be identified for each plant species used in the planting plan and shall be from WUCOLS or from horticultural researchers with academic institutions or professional associations as approved by the California Department of Water Resources (DWR). The plant factor is 0.1 for very low water use plants, 0.3 for low water use plants, 0.6 for moderate water use plants and 1.0 for high water use plants. A plan that mixes plants in a hydro-zone that require a different amount of water shall use the plant factor for the highest water using plant in the hydro-zone.

4. Temporarily irrigated areas shall be included in the low water use hydro-zone. Temporarily irrigated as used in this chapter means the period of time when plantings only receive water until they become established.

5. The surface area of a water feature, including swimming pools, shall be included in a high water use hydro-zone.

6. The calculations shall use the formula for the MAWA in SBMC 17.56.130 and for the ETWU in SBMC 17.56.140.

7. Each special landscaped area shall be identified on the worksheet and the area's water use calculated using an ETAF not to exceed 1.0.

#### **117.56.110 Grading design plan.**

The grading design plan required by SBMC 17.56.070 shall be prepared by a California licensed civil engineer, licensed landscape architect, licensed architect, or other landscape professional licensed by the state to do this work and shall comply with the following requirements:

A. The grading on the project site shall be designed for the efficient use of water by minimizing soil erosion, runoff and water waste resulting from precipitation and irrigation.

B. The plan shall show the finished configurations and elevations of each landscaped area including the height of graded slopes, the drainage pattern, pad elevations, finish grade and any storm water retention improvements.

#### **17.56.120 Irrigation schedule.**

The irrigation schedule required by SBMC 17.56.070 and 17.56.090 shall be prepared by a licensed landscape architect, licensed civil engineer, licensed architect, or other landscape professional licensed by the state to do this work and provide the following information:

A. A description of the automatic irrigation system that will be used for the project.

B. The ETo data relied on to develop the irrigation schedule, including the source of the data.

C. The time period when overhead irrigation will be scheduled shall conform with the applicable Drought Response Policies and Procedures of the Santa Fe Irrigation District which may vary according to the current Drought Response Level being enforced.

D. The parameters used for setting the irrigation system controller for watering times for:

1. The plant establishment period.

2. Established landscaping.
  3. Temporarily irrigated areas.
  4. Different seasons during the year.
- E. The consideration used for each station for the following factors:
1. The days between irrigation.
  2. Station run time in minutes for each irrigation event, designed to avoid runoff.
  3. Number of cycle starts required for each irrigation event, designed to avoid runoff.
  4. Amount of water to be applied on a monthly basis.
  5. The root depth setting.
  6. The plant type setting.
  7. The soil type.
  8. The slope factor.
  9. The shade factor.

**17.56.130 Maximum applied water allowance (MAWA).**

A. A landscape project subject to this chapter shall not exceed the MAWA. The MAWA for a landscape project shall be determined by the following calculation:

$$\text{MAWA} = (\text{ETo})(0.62)[(\text{ETAF} \times \text{LA}) + ((1-\text{ETAF}) \times \text{SLA})]$$

- B. The abbreviations used in the equation have the following meanings:
1. MAWA = Maximum applied water allowance in gallons per year.
  2. ETo = Evapotranspiration in inches per year.
  3. 0.62 = Conversion factor to gallons per square foot.
  4. ETAF = Evapotranspiration adjustment factor (0.55 residential and 0.45 for non-residential).
  5. LA = Landscaped area includes special landscaped area in square feet.
  6. SLA = Portion of the landscaped area identified as a special landscaped area in square feet.

**17.56.140 Estimated total water use (ETWU).**

A. An applicant for a project subject to this chapter shall calculate the ETWU for each landscaped area and the entire project using the following equation:

$$\text{ETWU} = (\text{ETo})(0.62)(\text{PF} \times \text{HA} / \text{IE} + \text{SLA})$$

- B. The abbreviations used in the equation have the following meanings:
1. ETWU = Estimated total water use in gallons per year.
  2. ETo = Evapotranspiration in inches per year.
  3. 0.62 = Conversion factor to gallons per square foot.
  4. PF = Plant factor from WUCOLS.
  5. HA = Hydro-zone area in square feet. Each HA shall be classified based upon the data included in the landscape and irrigation plan as high, medium, low or very low water use.
  6. IE = Irrigation efficiency of the irrigation method used in the hydro-zone.

7. SLA = Special landscaped area in square feet.  
C. The ETWU for a proposed project shall not exceed the MAWA.

**17.56.150 Adjustment to landscaped area for non-vegetated area.**

Rock and stone or pervious design features, such as decomposed granite ground cover, that are adjacent to a vegetated area may be included in the calculation of the MAWA and ETWU provided the features are integrated into the design of the landscape area and the primary purpose of the feature is decorative.

**17.56.160 New single-family residential projects with limited landscaping.**

The city shall provide an applicant for a new single-family residence not subject to this chapter where the landscaped area of the project is less than 2,500 square feet for rehabilitated landscapes and 500 square feet for new development with information regarding irrigation best management practices and access to the landscape design manual in order to increase public awareness of water efficient landscaping practices.

**17.56.170 Cemeteries.**

- A. A person submitting an application for a cemetery shall include the following:
1. A concept plan, as described in SBMC 17.56.050.
  2. A water conservation plan that complies with SBMC 17.56.100.
  3. A landscape irrigation and maintenance schedule that complies with SBMC 17.56.220

**17.56.180 Regulations applicable to use of turf.**

The following regulations shall apply to the use of turf on a project subject to this chapter:

- A. Only low volume or subsurface irrigation shall be used to irrigate turf.
- B. Turf shall not be allowed in the following circumstances:
1. Areas that do not have a utility as a recreational area with the exception of bio-swales required as storm water best management practices.
  2. In a median, parking lot island or parkway.
  3. On a slope greater than 25 percent grade (4:1)
  4. Where any dimension of the landscaped area is less than ten feet in any direction, with the exception of bio-retention areas.
  5. In a landscaped area that cannot be efficiently irrigated, such as avoiding runoff or overspray.
- C. A ball field, park, golf course, cemetery and other similar use shall be designed to limit turf in any portion of the landscaped area that is not essential for the operation of the facility. Areas where turf is not essential to the operation of the facility shall be landscaped with plants with lower water use requirements than turf.
- D. These regulations do not apply to the use of artificial turf.

**17.56.190 Projects with model homes.**

A. All model homes shall be landscaped using water efficient design practices and use signs and written information to demonstrate the principles of water efficient landscape described in this ordinance.

B. Each model home shall provide an educational sign in the front yard of the model home visible and readable from the roadway that the home faces that states in capital black lettering at least two inches high on a white sign, "THIS MODEL HOME USES WATER EFFICIENT LANDSCAPING AND IRRIGATION."

C. Educational signs shall identify the water efficient landscape featuring elements such as hydro-zones, irrigation equipment, and others that contribute to the overall water efficient theme.

D. Single-family residential developments that contain a model home or homes shall provide an Outdoor Water Smart Package to all persons visiting the home(s). In lieu of providing a hard-copy of the brochure, the visitors may be sent an electronic version of it. At a minimum, the brochure shall include:

1. Information describing the water efficient features of the model(s)'s landscaping.
2. Resources for additional information regarding water efficiency in landscaping.
3. Contact information for the local water purveyor.

#### **17.56.200 Recycled water.**

A. A person who obtains a permit for a project that is subject to this chapter shall use recycled water for irrigation when tertiary treated recycled water is available from the water purveyor who supplies water to the property for which the city issues a permit.

B. A person using recycled water shall install a dual distribution system for water received from a public water purveyor. Pipes carrying recycled water shall be purple.

C. A person who uses recycled water under this section shall be entitled to an ETAF of 1.0.

D. This section does not excuse a person using recycled water from complying with all state and local laws and regulations related to recycled water use.

#### **17.56.210 Landscaping and irrigation installation.**

A person issued a landscape approval for a project, other than a single-family residence where the landscaped area of the project is less than 2,500 square feet for rehabilitated landscapes and 500 square feet for new development, shall install the approved landscaping and irrigation system before final inspection of the project.

#### **17.56.220 Landscaping and irrigation maintenance.**

A. A property owner using water on property subject to a landscape approval, other than a single-family residence with a total landscaped area less than 2,500 square feet for rehabilitated landscapes and 500 square feet for new development, shall prepare a maintenance schedule for the landscaping and irrigation system on the project. The schedule shall provide for (1) routine inspection to guard against runoff and erosion and to detect plant or irrigation system failure, (2) replacement of dead, dying and diseased vegetation, (3) discouraging the use of invasive species, (4) repairing the irrigation system and its components, (5) replenishing mulch, (6) adding soil amendment when necessary to support and maintain healthy plant growth, (7) fertilizing, pruning and weeding and maintaining turf areas, and (8) maintenance to avoid obstruction of

motorists' view. The schedule shall also identify who will be responsible for maintenance.

B. After approval of a landscape plan, the owner is required to:

1. Maintain and operate the landscaping and irrigation system on the property consistent with the MAWA.

2. Replace broken or malfunctioning irrigation system components with components of the same materials and specifications, their equivalent or better.

3. Ensure that when vegetation is replaced, replacement plantings are representative of the hydro-zone in which the plants were removed and are typical of the water use requirements of the plants removed; provided, that the replaced vegetation does not result in mixing high water use plants with low water use plants in the same hydro-zone.

#### **17.56.230 Certificate of completion.**

Prior to receiving final approval for completion of the project, each applicant, other than for a single-family residence with a total landscaped area less than 2,500 square feet for rehabilitated landscapes and 500 square feet for new development, shall submit a signed certificate of completion and final documentation for the project under penalty of perjury within 10 days after installation.

A. The certificate of completion shall:

1. Be submitted on a form provided by the city;

2. Include a statement verifying that the landscaping and irrigation were installed as specified in the approved landscape and irrigation plan, all approved soil amendments were implemented, the installed irrigation system is functioning as designed and approved, the irrigation control system was properly programmed in accordance with the irrigation schedule, and the person operating the system has received all required maintenance and irrigation plans; and

3. Be signed by the professional of record for the landscape design.

B. The final submittal shall include:

1. Irrigation schedule that complies with SBMC 17.56.120, that describes the irrigation times and water usage for the project;

2. A landscaping and irrigation system maintenance schedule that complies with SBMC 17.56.220; and

3. A soil management report that complies with SBMC 17.56.080, if the applicant did not submit the report with the landscape documentation package;

4. Final "as built" plans, submitted by the professional of record, where there have been significant changes to the landscape plan during the installation of landscaping or irrigation devices or irrigation system components.

5. A diagram of the irrigation plan showing hydro-zones shall be kept with the irrigation controller for subsequent management purposes.

#### **17.56.240 Water waste prevention.**

A. No person shall use water for irrigation such that, due to runoff, low head drainage, overspray or other similar condition, water flows onto adjacent property, non-irrigated areas, structures, walkways, roadways or other paved areas.

B. No person whose landscape is subject to a landscape approval pursuant to this chapter shall apply water to the landscape in excess of the MAWA.

C. No person shall fail to maintain the irrigation system installed as part of a city approved landscape documentation package as required by this section.

D. The city may administer programs that may include water use analysis, irrigation surveys, and irrigation audits to evaluate water use. The city may use such information to provide recommendations to reduce the landscape water use for landscapes installed prior to the adoption of the ordinance codified in this chapter that are over an acre in size and have been identified as high water users.

**17.56.250 Irrigation Audit**

A. An irrigation audit, prepared by a certified landscape irrigation auditor, shall be prepared and submitted by the project owner to the City for all projects approved for development by the City after December 1, 2015 with a landscape area of 2,500 square feet, with the exception of single family residential projects.

B. The audit shall occur at the time of request for release of grading and landscape bonds and no sooner than one year after approval for occupancy.

C. The audit shall include a functional test for the following criteria: distribution uniformity, over spray and runoff control, and that water use does not exceed the MAWA once landscaping has been established.

**17.56.260 Violations.**

Any person violating any provision of this chapter or conditions of a permit issued pursuant to this chapter shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not more than \$1,000 or by imprisonment in the county jail for a period not to exceed six months, or by both such fine and imprisonment. In the alternative, the city may issue an administrative citation pursuant to Chapter 1.18 SBMC or violators may be subject to any other penalty authorized by law.

**17.56.270 Enforcement.**

A. The city manager shall administer and enforce the provisions of this chapter. Any city authorized personnel or enforcement officer may exercise any enforcement powers as set forth in the code.

B. The city may delegate to or enter into a contract with a local agency or other person to implement and administer any of the provisions of this chapter on behalf of the city.

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**17.56.280 Fees.**

An applicant for a project subject to this chapter shall include with the application all fees established by the current fee schedule to cover the cost to review a landscape documentation package, perform an on-site inspection and review any other documents the city requires pursuant to the requirements of this chapter.

**EFFECTIVE DATE:** This Ordinance shall be effective thirty (30) days after its adoption. Within fifteen (15) days after its adoption, the City Clerk of the City of Solana Beach shall cause this Ordinance to be published pursuant to the provisions of Government Code §36933.

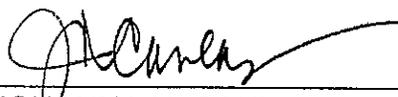
**INTRODUCED AND FIRST READ** at a special meeting of the City Council of the City of Solana Beach, California, on the 18<sup>th</sup> day of November, 2015; and

**THEREAFTER ADOPTED** at a regular meeting of the City Council of the City of Solana Beach, California, on the 9<sup>th</sup> day of December, 2015, by the following vote:

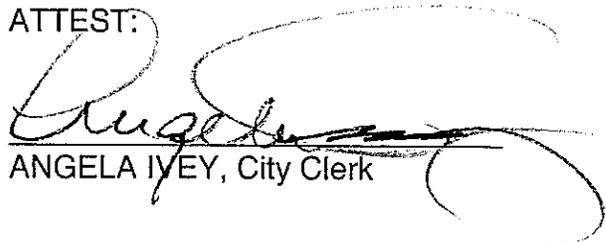
AYES: Councilmembers – Zito, Nichols, Marshall, Heebner  
NOES: Councilmembers – None  
ABSTAIN: Councilmembers – None  
ABSENT: Councilmembers – Zahn

  
\_\_\_\_\_  
DAVID A. ZITO, Mayor

APPROVED AS TO FORM:

  
\_\_\_\_\_  
JOHANNA N. CANLAS, City Attorney

ATTEST:

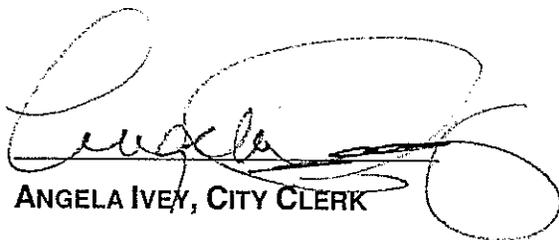
  
\_\_\_\_\_  
ANGELA IVEY, City Clerk



## ORDINANCE CERTIFICATION

STATE OF CALIFORNIA }  
COUNTY OF SAN DIEGO } §  
CITY OF SOLANA BEACH }

I, ANGELA IVEY, City Clerk of the City of Solana Beach, California, DO HEREBY CERTIFY that the foregoing is a full, true and correct copy of **ORDINANCE 467** amending the *Water Efficient Landscape Regulations Section 17.56 of the Solana Beach Municipal Code* as duly introduced on November 18, 2015 and adopted on December 9, 2015, a regular meeting, by the City Council of Solana Beach. This Ordinance has been published as required pursuant to law and the original is filed in the City Clerk's Office. (GC 40806).

  
ANGELA IVEY, CITY CLERK

CERTIFICATION DATE: December 14, 2015