ORDINANCE NO. _____

ORDINANCE OF THE CITY OF CHULA VISTA AMENDING THE LANDSCAPE WATER CONSERVATION ORDINANCE, CHAPTER 20.12 OF THE MUNICIPAL CODE, TO COMPLY WITH STATE REQUIREMENTS TO INCREASE WATER EFFICIENCY FOR NEW AND RETROFITTED LANDSCAPES

WHEREAS, in response to the ongoing drought in California, the California Code of Regulations Title 23, Waters, Division 2, Department of Water Resources, Chapter 2.7 "*Model Efficient Landscape Ordinance"* was revised and approved by the California Water Commission on July 7, 2015; and

WHEREAS, the action requires all municipalities and counties to either adopt the revised State's Model Water Ordinance, or to adopt an ordinance of equal or greater efficacy by December 1, 2015. The proposed revisions to the existing Chula Vista Landscape Water Conservation Ordinance meet the State requirements; and

WHEREAS, the current Chula Vista Landscape Water Conservation Ordinance, Chapter 20.12 of the Chula Vista Municipal Code, came into effect on January 1, 2010. The key principle was a requirement to compare and not exceed the anticipated water availability, on a given landscape project, with the estimated water use once the landscape and irrigation are installed; and

WHEREAS, Governor Brown's Drought Executive Order of April 1, 2015 (EO B-29-15) directed the Department of Water Resources to update the State's Model Water Efficient Landscape Ordinance through expedited regulation; and

WHEREAS, the Executive Order called for revising the State's Model Ordinance to increase water efficiency standards for new and retrofitted landscapes through:

- more efficient irrigation systems
- greywater usage
- onsite storm water capture
- limiting the portion of landscapes that can be covered in turf
- lowering the amount of water allowance that can be applied to landscape; and

WHEREAS, updating the ordinance to incorporate these elements will help stretch limited water supplies; and

WHEREAS, the California Water Commission approved its revised model water ordinance on July 7, 2015 and released the final text to municipalities on Sept 15; and

WHEREAS, the Executive Order also requires reporting on the implementation and enforcement of local ordinances, with required reports due by December 31, 2015.

NOW THEREFORE the City Council of the City of Chula Vista does ordain as follows:

Section I.

CHAPTER 20.12, LANDSCAPE WATER CONSERVATION

Sections:

20.12.010 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 landscapes in Chula

Vista that implement the landscape design requirements established by the Act. An updated Model Water Ordinance was approved by the California Water Commission on July 7, 2015 Consistent with the Legislature's findings, the purpose of this ordinance 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 and rehabilitated landscapes.
C. Use of water efficiently, and without waste, by setting a Maximum Applied Water Allowance as an upper limit for water use at the lowest practical amount.
D. Create 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.
E. Minimize energy use by reducing irrigation water requirements, reducing reliance on petroleum-based fertilizers and pesticides, and planting climate-appropriate shade trees in urban areas.
F. Conserve water by capturing and reusing rainwater and graywater wherever possible and selecting climate-appropriate plants that need minimal supplemental water after establishment.
G. Protect 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 to prevent erosion.
H. Protect 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.

20.12.020 Definitions

A. **"Applicant"** means an individual or entity submitting a landscape documentation package to request a permit, plan check, or design review from the City of Chula Vista.
B. **"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 schedule irrigation events using either evapotranspiration (weather-based) or soil moisture data.
C. **"Backflow prevention device"** means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.
D. **"City"** means the City of Chula Vista.
E. **"Certified landscape irrigation auditor**" means a person certified to perform landscape irrigation audits by an accredited academic institution, a professional trade organization or other program such as the US Environmental Protection Agency's WaterSense irrigation auditor certification program and Irrigation Association's Certified Landscape Irrigation Auditor program.
F. **"Compost"** means the safe and stable product of controlled biologic decomposition of organic materials that is beneficial to plant growth. (It may include the material known as Biochar.)

G. **"Conversion factor (0.62)"** means the number that converts acre-inches per acre per year to gallons per square foot per year.
H. **"Cool season turf"** means a type of turf that remains green in the winter months.
I. **"Distribution uniformity"** means the measure of the uniformity of irrigation water over a defined area.
J. **"Drip irrigation"** means any non-spray low volume irrigation system utilizing emission devices with a flow rate measured in gallons per hour. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.
K. **"Ecological restoration project"** means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.
L. **"Effective precipitation"** or "usable rainfall" (Eppt) means the portion of total precipitation which becomes available for plant growth.
M. "**Emitter"** means a drip irrigation emission device that delivers water slowly from the system to the soil.
N. **"Established"** in the context of landscape, means the point at which plants in the landscape have developed significant root growth into the site. Typically most plants are established after one or two years. Native habitat mitigation areas and trees may need three to five years for establishment.
O. **"Estimated Total Water Use" (ETWU)** means the total water used for the landscape area of the project.
P. **"ET adjustment factor (ETAF)"** means a factor that when applied to "reference evapotranspiration", adjusts for plant water requirements and irrigation efficiency, two major influences on the amount of water required for healthy landscapes. The ETAF for residential areas is 0.55 or below. The ETAF for non-residential areas is 0.45 or below. The ETAF for new and existing (non-rehabilitated) Special Landscape Areas shall not exceed 1.0. The ETAF for existing non-rehabilitated landscapes is 0.8.
Q. **"Evapotranspiration rate"** means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time. See also 'reference evapotranspiration.'
R. **"Flow rate"** means the rate at which water flows through pipes, valves and emission devices, measured in gallons per minute, gallons per hour, or cubic feet per second.
S. **"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.
T. **"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.
U. **"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.
V. **"Gray water"**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. "Gray water" 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. All graywater systems shall conform to the California Plumbing Code (Title 24, Part 5, Chapter 16) and any applicable Chula Vista Standards.

W. **"Hydrozone"** means a portion of the landscape area having plants with similar water needs and root depth. A hydrozone may be irrigated or non-irrigated.

X. **"Infiltration rate"** means the rate of water entry into the soil expressed as a depth of water per unit of time (e.g., inches per hour).

Y. **"Invasive plant species"** means species of plants not historically found in California that spread outside cultivated areas and can 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.

Z. **"Irrigation audit"** means an in-depth evaluation of the performance of an irrigation system conducted by a Certified Landscape Irrigation Auditor. An irrigation audit includes, 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.

AA. **"Irrigation efficiency" (IE)** 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 for purposes of this ordinance is 0.75 for overhead spray devices and 0.81 for drip systems.

BB. "**Invasive plant species"** means an evaluation of an irrigation system that is less detailed than an irrigation audit. An irrigation survey includes, but is not limited to: inspection, system test, and written recommendations to improve performance of the irrigation system.

CC. **"Landscape architect"** means a person who holds a license to practice landscape architecture in the state of California, pursuant to Business and Professions Code, Section 5615.

DD. **"Landscape area"** means an area with outdoor plants, turf and other vegetation that uses water provided by the Otay Water District, the Sweetwater Authority or other local water purveyor. A landscape area includes water features either in an area with vegetation or that stands alone. A landscape area does not include the footprint of buildings, structures, decks, patios, sidewalks, driveways, gravel or stone walkways void of plant materials, paved portions of parking lots or other hard landscape. A landscape area does not include an area without irrigation designated for non-development such as designated open space or area with existing natural vegetation or a transition zone.

EE. **"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.

FF. **"Landscape Manual"** means the City of Chula Vista Landscape Manual as may be amended from time to time.

GG. "**Landscape Documentation Package**" means a package of drawings and other documents that are required to be submitted to the City for approval in order to demonstrate that the landscape design complies with the requirements of this ordinance. The landscape documentation package is subject to periodic update as part of the landscape manual

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

II. **"Low volume irrigation"** means any equipment that uniformly delivers a low volume of water, precipitation rate, to the landscape such as 0.5 inches, 0.7 inches and 1.0 inch per hour.

JJ. **"Low water usage"** means a plant species identified as having a low plant factor in the context of plant selection.

KK. "**High water usage**" means a plant species identified as having a high plant factor in the context of plant selection.

LL. **"Mandatory Water Restriction"** Restrictions to water supply mandated by the State of California.

MM. **"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.

NN. **"Maximum Applied Water Allowance"** (MAWA) means the maximum allowed water use for a specific landscape area based on the square footage of the area, the ETAF and the reference ETo. The Estimated Total Water Use shall not exceed the Maximum Applied Water Allowance. (Special Landscape Areas, including recreation areas, areas permanently and solely dedicated to edible plants such as orchards and vegetable gardens, and areas irrigated with recycled water are subject to the MAWA with an ETAF not to exceed 1.0.) MAWA = (ETo) (0.62) [(ETAF x LA) + ((1-ETAF) x SLA)]

OO. **"Median"** is an area between opposing lanes of traffic that may be unplanted or planted with trees, shrubs, perennials, and ornamental grasses.

PP. **"Mine land reclamation project"** means any surface mining operation with a reclamation plan approved in accordance with the Surface Mining and Reclamation Act of 1975.

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

RR. **"Multi-family residential development"** means condominiums, apartments and mobile homes.

SS. **"New construction"** means, for the purposes of this ordinance, a new building with a landscape or other new landscape, such as a park, playground, or greenbelt without an associated building.

TT. **"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.

UU. **"Operating pressure"** means the pressure at which the parts of an irrigation system are designed by the manufacturer to operate.

VV. **"Outdoor 'WaterSmart' Package"** means a document/documents, for example leaflets and a checklist of recommendations, describing landscape water conservation principles and techniques, including water budgeting, appropriate to small landscape design, installation and renovation.

WW. **"Overhead spray devices"** or "overhead spray irrigation systems" means systems that deliver water through the air (e.g., spray heads and rotors).

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

YY. **"Parkway"** means the area between a sidewalk and the curb or traffic lane. It may be planted or unplanted, and with or without pedestrian egress.

ZZ. **"Permit"** means an authorizing document issued by local agencies for new construction or rehabilitated landscapes.

AAA. **"Pervious"** means any surfaces or material that allows the passage of water through the material and into underlying soil.

BBB. **"Plant factor"** means a factor that, when multiplied by the ETo, estimates the amount of water a plant needs for healthy growth. For purposes of this ordinance, the plant factor range for very low water use plants is 0 to 0.1, the plant factor range for low water use plants is ~~0~~0.1 to 0.3, the plant factor range for moderate water use plants is 0.4 to 0.6, and the plant factor range for high water use plants is 0.7 to 1.0. Plant factors cited in this ordinance are derived from the publication "Water Use Classification of Landscape Species". Plant factors may also be obtained from horticultural researchers, from academic institutions or professional associations as approved by the California Department of Water Resources (DWR).

CCC. **"Point of Connection"** means the source of water for a specific irrigation system.

DDD. **"Precipitation rate"** means the rate of application of water measured in inches per hour.

EEE. **"Prescriptive Compliance Option"** – An alternative submittal to the 'landscape documentation package' that may be used as a compliance option for approval of small scale landscape and irrigation projects.

FFF. **"Recreational area"** means an area, excluding private single family residential areas, designated for active play, recreation or public assembly in parks, sports fields, picnic grounds, amphitheaters or golf course tees, fairways, roughs, surrounds and greens.

GGG. **"Recycled water"** means water 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 disinfectant. "Recycled water" is sometimes referred to as "reclaimed water".

HHH. **"Reference evapotranspiration"** or **"ETo"** means a standard measurement of environmental parameters that affect the water use of plants. ETo is given in inches per day, month or year and is an estimate of the evapotranspiration of a large field of four inches to seven inches tall, cool season turf that is well watered. Reference evapotranspiration is used as the basis of determining the MAWA so that regional difference in climate can be accommodated.

III. **"Rehabilitated landscape"** means any re-landscaping project, that requires a permit, plan check, or design review, in accordance with the applicability criteria of this ordinance, and the modified landscape area is equal or greater than 2,500 square feet. In the

case of single-family homes, only those construction projects that have impacts to landscaped areas shall be deemed to be rehabilitated landscapes.

JJJ. **"Residential development"** means development of single family or multi-family homes.

KKK. **"Runoff"** means water that is not absorbed by the soil or landscape to which it is applied and flows from the landscaped area. For example, runoff may result from water that is applied at too great a rate (application rate exceeds infiltration rate) or when there is a slope.

LLL. **"Smart controller"** means a weather-based or soil moisture based irrigation controller that monitors and uses information about environmental conditions for a specific location to automatically adjust watering schedules.

MMM. **"Soil moisture sensing device"** or **"soil moisture sensor"** means a device that measures the amount of water in the soil. The device may also suspend or initiate an irrigation event.

NNN. "**Soil texture**" means the classification of soil based on its percentage of sand, silt, and clay.

OOO. **"Soil"** means the growing medium available for plant growth.

PPP. **"Special landscaped area"** (SLA) means an area of the landscape dedicated solely to edible plants, recreational areas, areas irrigated with recycled water, or water features using recycled water.

QQQ. **"Sprinkler head" or "spray head"** means a device which delivers water through a nozzle.

RRR. "**Statement of Substantial Conformance**" references the form administered by landscape inspectors.

SSS. **"Static water pressure"** means the pipeline or municipal water supply pressure when water is not flowing.

TTT. **"Station"** means an area served by one valve or by a set of valves that operate simultaneously.

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

VVV. **"Turf"** means a ground cover surface of mowed grass. Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and Tall fescue are cool-season grasses. Bermudagrass, Kikuyugrass, Seashore Paspalum, St. Augustinegrass, Zoysiagrass, and Buffalo grass are warm-season grasses.

WWW. **"Valve"** means a device used to control the flow of water in the irrigation system.

XXX. **"Vegetated area"** means an area with vegetation that is irrigated.

YYY. **"Warm season turf"** means a type of turf that grows during warm weather but becomes dormant during cold weather.

ZZZ. **"Water feature"** means a design element where open water provides an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, artificial streams, spas, and swimming pools (where water is artificially supplied). The surface area of water features is included in the high water use hydrozone of the landscape area. Constructed wetlands used for on-site wastewater treatment or storm water best management practices that are not irrigated and used solely for water treatment or storm water retention are not water features and, therefore, are not subject to the water budget calculation.

AAAA. **"WUCOLS"** means the Water Use Classification of Landscape Species published by the University of California Cooperative Extension and the Department of Water Resources 2014, as may be amended from time to time.

20.012.030 Applicability

After December 1, 2015 this ordinance shall apply to any project requiring a building permit, discretionary permit, or City approval of landscape and irrigation plans that are within the following categories:

A. **New construction projects** with an aggregate landscape area equal to or greater than **500 square feet** and **rehabilitated landscape projects** with an aggregate landscape area equal to or greater than **2,500 square feet** requiring a building or landscape permit, plan check or design review.

Applicants shall submit a Landscape Documentation Package to the City for approval, by City signature, prior to the installation of the landscape improvements.

B. A **model home** that includes a landscape area where the home is served by either the Otay Water District, the Sweetwater Authority or the California American Water Company. Applicants shall submit a Landscape Documentation Package to the City for approval, by City signature, prior to the installation of the landscape improvements. Plans shall include informational signs explaining the principles of water efficient landscape based on a water budget.

C. For projects that are **below** the above **stated thresholds** the City offers an Outdoor Water Smart Package explaining techniques that can be used to conserve water in landscape design.

This ordinance shall apply to new applications and applications that have been through one City plan check by City officials. Applications that have had two or more plan checks are 'grand fathered' in, with their current landscape design concept. However, it is recommended that the applicant voluntarily modify landscape proposals that are high in water use.

20.12.040 Exemptions

This ordinance does not apply to the following:

A. Registered local, state or federal historical sites.
B. Ecological restoration projects that do not require a permanent irrigation system.
C. Mine land reclamation projects that do not require permanent irrigation systems.
D. Existing plant collections, as part of botanical gardens and arboretums open to the public.

20.12.050 City of Chula Vista Landscape Manual

The City of Chula Vista Landscape Manual is incorporated into the Chula Vista Municipal Code by reference. The City of Chula Vista Landscape Manual may be periodically updated by the Director of Development Services.

20.12.060 Landscape Documentation Package

Project applicants shall submit the necessary information on required landscape and irrigation plans in a form and manner prescribed by the Director of Development Services. Necessary information shall include:

A. Title Sheet
B. Soil Management Report
C. Planting Plan
D. Landscape Construction Plan
E. Irrigation Plan
F. Grading Plan

20.12.070 Title Sheet

The title sheet shall contain items as described in the City of Chula Vista Landscape Manual. The title sheet shall also contain the applicant's signature and a date along with the statement **"I am familiar with and agree to comply with the requirements for landscape improvement plans as described in Chapter 20.12 of the Municipal Code. I have prepared this plan in compliance with those regulations. I certify that the plan implements the regulations to provide efficient landscape water use."**

20.12.080 Soil Management Report

The soil management report shall be prepared by a licensed landscape architect, licensed civil engineer or licensed architect and contain the information described in CVMC 20.12.080.A and 20.12.080.B. The soil management report shall be based on site conditions after grading operations have been completed. The soil management report information shall either be submitted as one of the sheets in the planting plan set or as a separate document.

A. An analysis of the soil for the proposed landscape area of the project covering information about soil texture, soil infiltration rate, pH, total soluble salts, plant sodium, percent organic matter and horticultural suitability.
B. Recommendations for soil amendments that may be necessary to allow healthy plant survival and growth in the landscape area using efficient irrigation techniques.
C. In projects with multiple landscape installations (i.e. production home developments) a soil sampling rate of 1 in 7 lots or approximately 15% will satisfy this requirement. Large landscape projects shall sample at a rate equivalent to 1 in 7 lots.

20.12.090 Planting Plan

The planting plan shall be prepared by a licensed landscape architect, licensed civil engineer or licensed architect and contain, but is not limited to, the following information:

A. A list/legend of all vegetation by botanical and common name that exists or is proposed to be planted in the landscape area(s). For new planting include the quantities, container size at planting, the location of each plant and the associated hydrozone. Identify existing vegetation to remain and existing vegetation to be removed. Protection and preservation of native species and natural vegetation and selection of local native species is encouraged where appropriate.

B. The planting design shall group plants in hydrozones based on the moisture requirements of those plants. A hydrozone may mix plants of moderate and low water usage or plants with high water usage with plants of moderate water usage. No hydrozone shall mix plants with high water usage with plants with low water use. Plant factors are available from WUCOLS.

C. Plant selection shall take into account suitability of the soil and climatic attributes as well as the availability of supplemental water available through irrigation.

D. The planting plan set shall include planting details, specifications, maintenance specifications and responsibilities.

E. Plant selections for all properties adjacent to a wild land–urban interface or open space area shall comply with current Chula Vista Fire Department guidelines and regulations.

F. The use of invasive plant species, such as those listed by the California Invasive Plant Council, is strongly discouraged.

G. The plan shall demonstrate compliance with best management practices required by Section 14.20 of the Municipal Code.

H. High water use plants, characterized by a plant factor of 0.7 to 1.0, are prohibited in street medians.

I. Soil Preparation, Mulch and Amendments
(A) Prior to the planting of any materials, compacted soils shall be transformed to a friable condition. On engineered slopes, only amended planting holes need meet this requirement.
(B) Soil amendments shall be incorporated according to recommendations of the soil report and what is appropriate for the plants selected.
(C) For landscape installations, 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% organic matter in the top 6 inches of soil are exempt from adding compost and tilling.

J. Organic mulch materials made from recycled or post-consumer shall take precedence over inorganic materials or virgin forest products unless the recycled post-consumer organic products are not locally available. Organic mulches are not required where prohibited by local Fuel Modification Plan Guidelines or other applicable local ordinances.

K. A minimum three inch (3″) layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated. To provide habitat for

beneficial insects and other wildlife, up to 5 % of the landscape area may be left without mulch.

20.12.100 Landscape Construction Plan

The landscape construction plan shall include all elements of hard landscape, paving, Storm water management and drainage not shown on civil engineering plans. It shall include physical layout, specifications and details. The landscape construction plan shall include plans, details and specifications of any water features that comprise the overall landscape improvements. Implementing storm water best management practices into the landscape and grading design plans to minimize runoff and to increase on-site rainwater retention and infiltration are encouraged.

A. Project applicants shall refer to the local agency or Regional Water Quality Control Board for information on any applicable storm water technical requirements.
B. All planted landscape areas are required to have friable soil to maximize water retention and infiltration.
C. It is strongly recommended that landscape areas be designed for capture and infiltration capacity that is sufficient to prevent runoff from impervious surfaces as required by any applicable local, regional, state or federal regulation.
D. It is recommended that storm water projects incorporate any of the following elements to improve on-site storm water and dry weather runoff capture and use:
    (1) Grade impervious surfaces, such as driveways, during construction to drain to vegetated areas.
    (2) Minimize the area of impervious surfaces such as paved areas, roof and concrete driveways.
    (3) Incorporate pervious or porous surfaces (e.g., gravel, permeable pavers or blocks, pervious or porous concrete) that minimize runoff.
    (4) Direct runoff from paved surfaces and roof areas into planting beds or landscaped areas to maximize site water capture and reuse.
    (5) Incorporate rain gardens, cisterns, and other rain harvesting or catchment systems.
    (6) Incorporate infiltration beds, swales, basins and drywells to capture storm water and dry weather runoff and increase percolation into the soil.
    (7) Consider constructed wetlands and ponds that retain water, equalize excess flow, and filter pollutants.

20.12.110 Irrigation Plans

The irrigation plans shall be prepared by a licensed landscape architect, licensed civil engineer, licensed architect or an irrigation consultant. The irrigation plans shall include, but are not be limited to, the following information:

A. The location, type and size of all components of the irrigation system that will provide water to the landscape area, including, but not limited to, controller, water lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, pressure regulators and backflow devices.

B. The irrigation water source and type (potable or recycled), point of connection, the static water pressure at the point of connection, the application rate in inches per hour and the design operating pressure in pounds per square inch for each station.

C. Irrigation schedule information including typical irrigation schedules that demonstrate that landscape can thrive using the MAWA calculated as part of that package. Include specification notes for routine inspection, repair and replacement of equipment and state the party responsible for maintenance.

D. A table that identifies MAWA for the improvements, including the calculations used to determine the MAWA. The calculations shall be based on the formula in paragraph 20.12.140. Temporarily irrigated areas shall be included in the low water use hydrozone. The surface area of a water feature or pool shall be included in the high water use areas for the purposes of water budget calculation.

E. A table that identifies ETWU for the improvements and includes the calculations used to determine the ETWU. The calculations shall be based on the formula in paragraph 20.12.150. Temporarily irrigated areas shall be included in the low water use hydrozone. The surface area of a water feature or pool shall be included in the high water use areas for the purposes of water budget calculation.

F. The plan shall demonstrate compliance with best management practices required by Section 14.20 of the municipal code.

G. Identify any applicable graywater discharge piping, system components and area(s) of distribution.

H. Notes describing requirement to carry out an independent irrigation audit upon completion of landscape improvements.

20.12.120 Grading Plans

Grading plans shall include site grading information including, but not limited to, elevations, slope heights, drainage patterns, pad elevations, storm water management, and finish grade. Previously approved grading plans that comply with the City grading ordinance Chapter 15.04, "as built" grading plans or grading plans undergoing the grading permit approval process are acceptable submittals.

20.12.130 Irrigation System Design

The following techniques and practices shall be incorporated into the design of irrigation systems:

A Landscape water meters, defined as either a dedicated water service meter or private sub-meter, shall be installed for all non-residential irrigated landscapes of 1,000 sq. ft. but not more than 5,000 sq.ft. (the level at which *Water Code* 535 applies) and residential irrigated landscapes of 5,000 sq. ft. or greater. A landscape water meter may be either:

1. A customer service meter dedicated to landscape use provided by the local water purveyor; or
2. A privately owned meter or sub-meter.

B The irrigation system shall be designed to conform to the hydrozones of the plants specified in the planting plan.

C The irrigation system shall be designed to prevent runoff, over spray, low-head drainage and other similar conditions where irrigation water flows or sprays onto area not intended for irrigation and use low volume irrigation or mulched areas wherever feasible

D Portions of irrigation systems containing slopes greater than 25 percent shall utilize an application rate of 0.75 inches per hour or less to prevent runoff unless the applicant clearly demonstrates that no runoff or erosion will occur. (Prevention of runoff and erosion must be confirmed during the irrigation audit.)

E Sprinkler heads and other low emission devices shall be selected based on what is appropriate for the plant type in the hydrozone and shall have matched precipitation rates unless otherwise directed by the manufacturer's recommendations.

F Sprinkler spacing shall be designed to achieve the highest possible distribution uniformity.

G Areas less than ten (10) feet in width in any direction shall be irrigated with subsurface irrigation or other means that produces no runoff or overspray.

H The system shall provide that only low volume irrigation is used to irrigate any vegetation within 24 inches of an impermeable surface unless the adjacent impermeable surfaces are designed and constructed to cause water to drain entirely into landscaped areas.

J The irrigation system shall be regulated by means of a smart controller (either evapotranspiration, weather based, soil moisture utilizing non-volatile memory based or similar.).

K Irrigation projects equal or greater than 5,000 square feet shall include the installation of a master valve and flow sensor to prevent water waste associated with mainline breaks and other failures.

L Where feasible, trees shall be placed on separate valves from shrubs, groundcover and turf to facilitate the appropriate irrigation of trees. The mature size and extent of the root zone shall be considered when designing irrigation for the tree.

M If the water pressure is below or exceeds the recommended pressure of the specified irrigation devices, the installation of a pressure regulating device is required to ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.

N Flow sensors that detect high flow conditions created by system damage or malfunction are required for all on non-residential landscapes and residential landscapes of 5000 sq. ft. or larger.

O All irrigation emission devices must meet the requirements set in the American National Standards Institute (ANSI) standard, American Society of Agricultural and Biological Engineers'/International Code Council's (ASABE/ICC) 802-2014 "Landscape Irrigation Sprinkler and Emitter Standard, All sprinkler heads installed in the landscape must document a distribution uniformity low quarter of 0.65 or higher using the protocol defined in ASABE/ICC 802-2014.

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20.12.140 Maximum Applied Water Allowance (MAWA)

All applicable landscapes shall not exceed the MAWA calculated for the project using the following formula:

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

In which the following abbreviations apply:

1. MAWA = Maximum Applied Water Allowance in gallons/year
2. ETo = Evapotranspiration in inches per year.
3. 0.62 = Conversion factor to gallons per square foot.
4. ETAF = 0.55 or below for residential landscape area
5. ETAF = 0.45 or below for non-residential areas
6. LA = Landscape Area excluding SLA.
7. SLA = Portion of the landscape area identified as Special Landscape areas. Measured in square feet*

* The City reserves the right to reduce the ET adjustment factor (ETAF) for Special Landscape Areas that are the responsibility of the City to maintain.

20.12.150 Estimated Total Water Use (ETWU)

All applicable landscape shall calculate the ETWU for each project using the following Formula:

ETWU = Eto x 0.62 x [((PF x HA)/IE) + SLA]

{Considering precipitation ETWA = (Eto-Eppt) x 0.62 x [((PF x HA)/IE) +SLA**]}**

In which the following abbreviations apply;

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 = Hydrozone Area in square feet. Each HA shall be classified according to its water use; high medium, or low according to the legends on the planting plans.

6. IE = Irrigation Efficiency (0.75 for overhead spray devices and 0.81 for drip systems).
7. Eppt – Effective precipitation or useable rainfall
8. SLA = Portion of the landscape area identified as Special Landscape areas measured in square feet.

20.12.160 Water Allowance / Water Use Comparison.

Irrigation plans shall state, in close proximity on the sheet, the MAWA and the ETWU for each Point of Connection thereby demonstrating that the ETWU does not exceed the MAWA in a format acceptable to the Director of Development Services or designee.

Any sets of plans where the ETWU does exceed the MAWA shall not be approved by the City. (ETWU shall be equal to or less than MAWA)

Mandatory Water Restriction from the State of California, if implemented, may override the maximum water allowance calculated for this project.

20.12.170 Limitations On The Use Of Water Features.

The total of all water features for a project, other than single-family homes with a landscape area of less than 5,000 square feet and a homeowners association or apartment building swim complex that serves a residential project, shall be limited to 15 percent of the total landscape area of the project.

20.12.180 Turf Regulations

The following regulations shall apply to all projects that are required to submit a landscape design package to the City for approval:

A. Turf shall not be used on slopes greater than 25 percent where the toe of the slope is adjacent to an impermeable surface.
B. Areas less than ten (10) feet in width in any direction shall be irrigated with subsurface irrigation or other means that produces no runoff or overspray.
C. On commercial, industrial or multi-family landscape no turf shall be installed in a median, parking lot island or parkway unless, if determined by the city manager, limited use of turf is necessary to provide safe access for pedestrians leaving a parked vehicle to reach the sidewalk.
D. On commercial, industrial or multifamily landscape no turf shall be installed on any portion of the site that is inaccessible or unusable to a person who uses the site.
E. On commercial or industrial projects, decorative cool season turf shall not be used. The use of warm season turf shall not exceed 15 percent of the total landscape area of a project.
F. An athletic field, park, golf course, cemetery or other similar use shall be designed to limit the use of turf to only those areas where it is essential for the operation of the

facility, as determined by the city manager. Areas where turf is not essential to the operation of the facility shall be landscaped with plants with lower water use requirements than turf.

G. No turf shall be allowed in a landscape area that cannot be efficiently irrigated, for example where overspray and run off cannot be avoided.

20.12.190 Public Education & Model Homes

All model homes shall clearly display a sign, visible from the roadway adjacent to the home using black writing (two inches high minimum) on a white sign stating, THIS MODEL HOME USES WATER EFFICIENT LANDSCAPE AND IRRIGATION. Signs shall explain the principles of water efficient landscape based on a water budget and demonstrate low water use approaches to landscaping such as using native plants, graywater systems, and rainwater catchment systems.

Developers shall provide homebuyers with an Outdoor 'WaterSmart' Package at move-in and information about the City of Chula Vista Naturescape Program.

20.12.200 Recycled Water and Gray Water

Newly constructed and rehabilitated landscapes for public agencies and private development projects with a landscape area equal to or greater than 2,500 square feet including, but are not limited to, industrial, commercial, cemetery, public, quasi-public, institutional and multi-family residential development shall use recycled water or gray water for irrigation purposes where it is available.

Use of recycled water or gray water for irrigation purposes does not excuse a person from complying with all State and local laws and regulations related to recycled water use or gray water use.

20.12.210 Landscape Installation

An approved landscape design package shall be fully installed prior to final inspection.

20.12.220 Landscape and Irrigation Maintenance

Once the landscape on all projects, approved as a result of these regulations, is established, it shall be maintained to ensure compliance with the approved MAWA by the party responsible for landscape maintenance.

20.12.230 Modified Approvals

An Applicant may submit an application to modify part or all of their Landscape Documentation Package.

20.12.240 Irrigation Testing and Statement of Substantial Conformance

(a) For all projects approved by the City, the landscape architect of record shall state in writing that the landscape improvements have been installed in compliance with the approved Landscape Documentation Package prior to final inspection and City issuance of a certificate of completion of the project. They shall be satisfied that the irrigation system has been functionally tested, by testing, irrigation survey or irrigation audit, for, but not limited to, the following: distribution uniformity, over spray and that runoff has been addressed, and water use can match the included calculations once plants are established with the irrigation provided. The project applicant shall submit a copy of the testing, irrigation survey or irrigation audit to the City prior to completion or turnover in the case of public improvements.

(2) All landscape irrigation audits shall be conducted by a third party, independently certified landscape irrigation auditor. Landscape audits shall not be conducted by the person who designed the landscape or installed the landscape.

20.12.250 City's Right to Inspect

The City has the right, but not the obligation, to inspect any landscape installation for which it has an approved Landscape Documentation Package.

20.12.260 Waste Water Prevention

No new irrigation system (since the approval of this ordinance) shall allow irrigation water to flow onto adjacent property, non-irrigated areas, structure, walkways, roadways or other paved areas whether the cause is run off, low head drainage or other similar condition. Penalties for violating any provisions of this chapter will be issued pursuant to CVMC 1.41.100 et seq.

APPENDIX 1 Prescriptive Compliance Option

(a)This appendix contains prescriptive requirements which may be used as a compliance option to the Model Water Efficient Landscape Ordinance on small scale landscape and irrigation submittals. (2,500 square feet or less)

(b) Compliance with the following items is mandatory and must be documented on a landscape plan in order to use the prescriptive compliance option:

(c)At the time of final inspection, the permit applicant must provide the owner of the property with a certificate of completion, certificate of installation, irrigation schedule and a schedule of landscape and irrigation maintenance.

(1) Submit a Landscape Documentation Package which includes the following elements:

(A) date

(B) project applicant

(C) project address (if available, parcel and/or lot number(s))

(D) total landscape area (square feet), including a breakdown of turf and plant material

(E) project type (e.g., new, rehabilitated, public, private, cemetery, homeowner-installed)

(F) water supply type (e.g., potable, recycled, well) and identify the local retail water purveyor if the applicant is not served by a private well

(G) contact information for the project applicant and property owner

(H) applicant signature and date with statement, "I agree to comply with the requirements of the prescriptive compliance option to the MWELO".

(2) Incorporate compost at a rate of at least four cubic yards per 1,000 square feet to a depth of six inches into landscape area (unless contra-indicated by a soil test);

(3) Plant material shall comply with all of the following;

(A) For residential areas, install climate adapted plants that require occasional, little or no summer water (average WUCOLS plant factor 0.3) for 75% of the plant area excluding edibles and areas using recycled water; For non-residential areas, install climate adapted plants that require occasional, little or no summer water (average WUCOLS plant factor 0.3) for 100% of the plant area excluding edibles and areas using recycled water;

(B) A minimum three inch (3″) layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated.

(4) Turf shall comply with all of the following:

(A) Turf shall not exceed 25% of the landscape area in residential areas, and there shall be no turf in non-residential areas;

(B) Turf shall not be planted on sloped areas which exceed a slope of 1 foot vertical elevation change for every 4 feet of horizontal length;

(C) Turf is prohibited in parkways less than 10 feet wide, unless the parkway is adjacent to a parking strip and used to enter and exit vehicles. Any turf in

parkways must be irrigated by sub-surface irrigation or by other technology that creates no overspray or runoff.

(5) Irrigation systems shall comply with the following:

(A) Automatic irrigation controllers are required and must use evapotranspiration or soil moisture sensor data and utilize a rain sensor.

(B) Irrigation controllers shall be of a type which does not lose programming data in the event the primary power source is interrupted.

(C) Pressure regulators shall be installed on the irrigation system to ensure the dynamic pressure of the system is within the manufacturers recommended pressure range.

(D) Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) shall be installed as close as possible to the point of connection of the water supply.

(E) All irrigation emission devices must meet the requirements set in the ANSI standard, ASABE/ICC 802-2014. "Landscape Irrigation Sprinkler and Emitter Standard," All sprinkler heads installed in the landscape must document a distribution uniformity low quarter of 0.65 or higher using the protocol defined in ASABE/ICC 802-2014.

(F) Areas less than ten (10) feet in width in any direction shall be irrigated with subsurface irrigation or other means that produce no runoff or overspray.

(6) For non-residential projects with landscape areas of 1,000 square feet or more, a private sub-meter(s) to measure landscape water use shall be installed.

Section II. Severability

If any portion of this Ordinance, or its application to any person or circumstance, is for any reason held to be invalid, unenforceable or unconstitutional, by a court of competent jurisdiction, that portion shall be deemed severable, and such invalidity, unenforceability or unconstitutionality shall not affect the validity or enforceability of the remaining portions of the Ordinance, or its application to any other person or circumstance. The City Council of the City of Chula Vista hereby declares that it would have adopted each section, sentence, clause or phrase of this Ordinance, irrespective of the fact that any one or more other sections, sentences, clauses or phrases of the Ordinance be declared invalid, unenforceable or unconstitutional.

Section III. Construction

The City Council of the City of Chula Vista intends this Ordinance to supplement, not to duplicate or contradict, applicable state and federal law and this Ordinance shall be construed in light of that intent.

Section IV. Effective Date

This Ordinance shall take effect and be in force on the thirtieth day after its final passage.

Section V. Publication

The City Clerk shall certify to the passage and adoption of this Ordinance and shall cause the same to be published or posted according to law.

Presented by

_____
Kelly Broughton
Director of Development Services

Approved as to form by

_____
Glen R. Googins
City Attorney