

ORDINANCE NO.

AN ORDINANCE AMENDING SECTIONS 17.70.015 AND 17.70.070 OF THE CORONA MUNICIPAL CODE, PERTAINING TO LANDSCAPING, FENCES, WALLS, AND HEDGES, AND AMENDING THE RESIDENTIAL AND COMMERCIAL AND INDUSTRIAL LANDSCAPE DESIGN GUIDELINES

WHEREAS, California Constitution Article X, Section 2 and California Water Code Section 100 provide that because of conditions prevailing in the State of California (the “State”), it is the declared policy of the State that the general welfare requires that the water resources of the State shall be put to beneficial use to the fullest extent of which they are capable, the waste or unreasonable use of water shall be prevented, and the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and the public welfare; and

WHEREAS, pursuant to California Water Code Section 106, it is the declared policy of the State that the use of water for domestic use is the highest use of water and that the next highest use is for irrigation; and

WHEREAS, California Assembly Bill 1881 (“AB 1881”), enacted into law on September 28, 2008, modifies and strengthens the existing “Water Conservation in Landscaping Act” (California Government Code section 65591 et seq.) (the “Act”); and

WHEREAS, the Act’s goal is to improve state water conservation efforts by establishing a model water efficient landscape ordinance for local agencies to adopt and use for the purpose of reducing water waste associated with irrigation of outdoor landscaping; and

WHEREAS, AB 1881 requires the State Department of Water Resources (“Department”) to update the existing model water efficient landscape ordinance which provides guidelines for cities and counties to adopt local landscape irrigation ordinances as required by the law; and

WHEREAS, all cities and counties are required to either adopt the updated model water efficient landscape ordinance (the “Model Ordinance”) or, by January 1, 2010, adopt their own water efficient landscape ordinance that is as effective in conserving water as the Model Ordinance; and

WHEREAS, the City has determined to adopt its own local water efficient landscape ordinance that is as effective in conserving water as the Model Ordinance; and

WHEREAS, this Ordinance is exempt from review under the California Environmental Quality Act (“CEQA”) (California Public Resources Code Section 21000 et seq.). Pursuant to State CEQA Guidelines Section 15307 (14 Cal. Code Regs., § 15307), this Ordinance is covered by the CEQA Categorical Exemption for actions taken to assure the maintenance, restoration,

enhancement, or protection of a natural resource where the regulatory process involves procedures for protection of the environment. The adoption of this ordinance will result in the enhancement and protection of water resources, and will not result in cumulative adverse environmental impacts or any other potentially significant impact described in State CEQA Guidelines Section 15300.2. It is therefore exempt from the provisions of CEQA.

BE IT ORDAINED, by the City Council of the City of Corona as follows:

SECTION 1. FINDINGS.

(a) The City Council hereby finds and determines that the foregoing recitals are true and correct and are incorporated herein and further finds as follows:

(1) current local design practices in new landscapes typically achieve the State Model Water Efficient Landscape Ordinance water use goals;

(2) all water services within the City are metered;

(3) landscape plan submittal and review has been an established practice in the City of Corona; and

(3) the proposed amendments to the City of Corona Municipal code will establish water efficient landscape regulations that are as effective in conserving water as the Model Ordinance.

(b) Consistent with these findings, the purpose of the amendments to Municipal Code sections 17.70.015 and 17.70.070 is to establish alternative model water efficient landscape regulations which are acceptable under AB 1881 as being at least as effective as the State Model Water Efficient Landscape Ordinance in the context of conditions in the City. The amendments will:

(1) promote the benefits of consistent landscape ordinances with neighboring local and regional agencies;

(2) promote the values and benefits of landscapes while recognizing the need to invest water and other resources as efficiently as possible;

(3) establish a structure for planning, designing, installing, maintaining, and managing water efficient landscapes in new construction and rehabilitated projects;

(3) establish provisions for water management practices and water waste prevention for existing landscapes; and

(4) use water efficiently without waste by setting a Maximum Annual Water Allowance as an upper limit for water use and reduce water use to the lowest practical amount.

SECTION 2. AMENDMENTS TO SECTION 17.70.015.

Section 17.70.015, of the City of Corona Municipal Code is hereby amended to read as follows:

17.70.015 Definitions.

As used in this chapter, the following definitions shall apply except where the context of such words or phrases clearly indicates a different meaning or construction, the following words, terms, meaning and phrases, when used in this Section 17.70.070, shall apply:

- (A) **“Association”** means a nonprofit corporation or unincorporated association created for the purpose of managing a common interest development.
- (B) **“Artificial Turf” or “Synthetic Turf”** means a minimum of a soft polyethylene 1 ½ inch green synthetic fiber that resembles real grass, is ultra-violet light (UV) protected, treated and tufted on a porous backing. The surface is in-filled with crumbed rubber and sand to increase stability, creating a weighted surface. The product is installed on a porous surface that is designed, compacted, and graded for positive drainage.
- (C) **“Bioswale”** refers a vegetated depression engineered to collect, store, and infiltrate stormwater runoff.
- (D) **“Certificate of Completion”** means the certificate required to be completed and submitted to the city certifying that the landscaping project has complied with the provisions of Section 17.70.070 and the Guidelines.
- (E) **“Common interest development”** means a community apartment project, condominium project, planned development, and stock cooperative pursuant to California Civil Code Section 1351.
- (F) **“Dedicated Landscape Water Meter”** means a water meter sized and designed to provide water for landscape irrigation only.
- (G) **“Developer installed landscaping”** means landscaping which is installed by, or authorized to be installed by, an entity responsible for the improvement (constructing or reconstructing) of property in the city and subject to city approval.
- (H) **“Drip/micro spray/subterranean/point to point drip/bubbler”** means an irrigation delivery device/system designed to convey water to plant material in a quantity measured in gallons per hour (GPH) or designed to flood irrigate a single plant. Bubblers are considered only appropriate for trees on nearly level ground.
- (I) **“Ecological restoration project”** means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.
- (J) **“Enforcement officer”** means any individual employed or otherwise charged by the city to inspect or enforce codes, ordinances, mandates, regulations, resolutions, rules, or other laws adopted by the City Council or other regulatory bodies, employee or agent of the City authorized to enforce the provisions of the Municipal Code as designated in writing by the City.
- (K) **“Evapotranspiration”** means the rate at which plant material utilizes water through evaporation and transpiration (plant consumption of water and vaporization through plant leaves).

- (L) **“Guidelines”** mean, collectively, the City of Corona Landscape Design Guidelines for Residential Development and the City of Corona Landscape Design Guidelines for Commercial and Industrial Development, which describe procedures, calculations, and requirements for landscaping projects subject to Section 17.70.070.
- (M) **“Hardscape”** means any non-irrigated, inorganic and generally impermeable surface used in landscape design. Driveways and walkways are not considered as hardscape.
- (N) **“Homeowner installed”** means any landscaping project either installed by a private individual for a single-family residence or duplex or installed by a landscape professional or other person hired by a homeowner. A homeowner, for purposes of this Chapter 17.70, is a person who occupies the dwelling he or she owns or rents. This definition excludes speculative homes, which are not owner-occupied dwellings and which are subject under Section 17.70.070(A)(2) to the requirements applicable to developer installed landscaping for new construction projects.
- (O) **“Hydrozone”** means a group or collection of plant material with similar water and aspect requirements.
- (P) **“Landscaped area”** means all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Annual Water Allowance and Estimated Annual Water Use calculations of Section 17.70.070 and the Guidelines. The landscaped area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other permeable or impermeable hardscape, and other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation).
- (Q) **“Landscape Certification Form”** means the form required to be submitted by the project applicant and which contains a water conservation certification statement by a landscape architect or landscape professional.
- (R) **“Landscape professional”** means a licensed landscape architect, licensed landscape professional, or any other person authorized to design a landscape pursuant to Sections 5500.1, 5615, 5641, 5641.1, 5641.2, 5641.3, 5641.4, 5641.5, 5641.6, 6701, 7027.5 of the California Business and Professions Code, Section 832.27 of Title 16 of the California Code of Regulations, and Section 6721 of the California Food and Agriculture Code.
- (S) **“Landscape project”** means the installation of any plant material for visual enhancement, shade, glare reduction, fuel modification (to control the spread of fire) or erosion control purposes and subject to the review and approval of the city.
- (T) **“Low Precipitation Irrigation”** means an irrigation system designed to convey water to plant material in a quantity measured in gallons per hour (GPH) as opposed to gallons per minute (GPM) and includes drip, point-to-point drip, subterranean, micro-spray, and matched precipitation rotators (for residential warm season turf only) technologies.
- (U) **“Maximum Annual Water Allowance” or “MAWA”** means the upper limit of annual applied water for the established landscaped area as specified in the Guidelines. The Estimated Annual Water Use shall not exceed the Maximum Annual Water Allowance.
- (V) **“Mined-land reclamation projects”** means any surface mining operation with a reclamation plan approved in accordance with the Surface Mining and Reclamation Act of 1975.
- (W) **“Model Ordinance”** means the **Model Water Efficient Landscape Ordinance** adopted by the California Department of Water Resources in accordance with California Government Code section 65591 *et seq.*

- (X) "**Mulch**" means a minimum layer of protective covering of various organic materials (including wood, decomposed granite, and rock placed around plants to prevent evaporation of moisture and to control weeds).
- (Y) "**New construction**" means a new building with landscaping or a landscape-dominated project, such as a park, playground, playing field, or greenbelt or other new landscape, which may or may not have an associated building or structure.
- (Z) "**Person**" means any natural person, firm, joint venture, joint stock company, partnership, public or private association, club, company, corporation, business trust, organization, public or private agency, government agency or institution, school district, college, university, any other user of water provided by the city, or the manager, lessee, agent, servant, officer or employee of any of them or any other entity which is recognized by law as the subject of rights or duties.
- (AA) "**Pressure Regulating Device**" means a manufactured mechanical device designed to lower the downstream operating pressure of an irrigation system.
- (BB) "**Project applicant**" means the person submitting a landscape design plan to the city pursuant to section 17.70.070 and the Guidelines, to request a permit, plan check or design review from the city for the installation of a landscaping project.
- (CC) "**Recycled Water**" means water which, as a result of treatment of wastewater, is suitable for direct beneficial use or controlled use that would not otherwise occur.
- (DD) "**Reference Evapotranspiration or ETo**" is the quantity of water evaporated from adjacent soil surfaces and transpired by plants in terms of inches for a particular climate zone. The reference Evapotranspiration for Corona is 56.37 which comes from the agricultural research station at UC Riverside.
- (EE) "**Rehabilitation project**" means a landscaping project that results in the substantial removal and replacement of, and/or modifications to, existing landscaping and meets the requirements under Section 17.70.070(A)(3) and (5).
- (FF) "**Sub-shrub**" means a shrub that does not grow to a mature size of more than 18 inches in diameter and height, is typically specified in 1 gallon cans, and is typically specified as a foreground plant.
- (GG) "**Smart Irrigation Controller**" or "**Smart Controller**" means an irrigation controller that is climate or sensor based that automatically adjusts for local weather and site conditions.
- (HH) "**Standard Landscape Plans**" refers to pre-existing plan templates for commercial/industrial, model homes, slopes, and homeowner's association landscape projects. The templates contain a title sheet and all required notes, specifications, and details specifically relating to the project type. The templates are available at [discovercorona.com/City Departments/Community Development/Standard Landscape Plans](http://discovercorona.com/City%20Departments/Community%20Development/Standard%20Landscape%20Plans) or from the Community Development counter at Corona City Hall for no fee.
- (II) "**Turf**" means any grass, as listed below, which is applied by sod, stolons, or hydroseed.\
1. Cool-season grasses refer to Festuca arundinacea-Tall Fescues and Poagenius (Bluegrass).
 2. Warm-season grasses refer to all Bermuda, Kikuyu and other rhizominous grasses.
- (JJ) "**Water Budget**" determines how much water a particular landscape needs over a specific period of time. The Maximum Annual Water Allowance (MAWA) is calculated and

compared to the Estimated Annual Water Use (EAWU) on the plans to verify that the project landscaping is not exceeding the allowed water use.

- (KK) **"Water Conservation Certification Statement"** means a written declaration by a California registered landscape architect or landscape contractor, a certified irrigation designer or other licensed or certified professional in a related field, which certifies that the plans, specifications, and details comply with the municipal code and landscape design guidelines. The signed statement would read as follows: I hereby certify, as the landscape architect/other licensed professional of record that the information provided here in meets the minimum standards as outlined in the Corona Municipal Code Section 17.70 and the adopted design guidelines for the development of this project. This statement must be signed and dated with the appropriate license stamp on the title sheet of the project plans subject to review and approval by the city.
- (LL) **"Water conserving plants"** means any live, plant material which exhibits drought tolerant characteristics, such as, will survive and grow in a designated location with limited supplemental water. For the purpose of this chapter, the terms "water efficient plants" and "drought tolerant plants" are synonymous.
- (MM) **"Water feature"** means a design element where water is artificially supplied and where open water performs an aesthetic or recreational function. Water features include artificial ponds, lakes, waterfalls, fountains, artificial streams, spas, and swimming pools. The surface area of water features is included in the high water use hydrozone of the landscaped area. Constructed wetlands used for on-site wastewater treatment, habitat protection 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.
- (NN) **Water Use Classifications of Landscape Species (WUCOLS, Most Current Edition)** refers to "A Guide to Estimating Irrigation Water Needs of Landscape Plants in California." The Guide is two-part manual with the first part consisting of "Estimating the Irrigation Water Needs of Landscape Plants in California" using the Landscape Coefficient Method and part two contains a listing of plants and their calculated water needs.
- (OO) **"Watering window"** means the time of day irrigation is allowed pursuant to any applicable city, regional, state, or local water purveyor water conservation or drought response laws, rules, policies, or regulations applicable within the city.

SECTION 3. AMENDMENTS TO CITY OF CORONA MUNICIPAL CODE SECTION 17.70.070.

Section 17.70.070 of the Municipal Code is hereby amended in its entirety to read as follows:

17.70.070 – Landscaping.

A) Water efficient landscape measures.

1) Purpose and intent.

Pursuant to state law, the city must implement measures resulting in the more efficient use of water through landscape and irrigation design. This may be achieved through the use of

drought tolerant plant material, restricted use of turf, and various irrigation technologies. The purpose and intent of Section 17.70.070 are to comply with state law by:

- (a) establishing alternative water conservation and water use management practices and requirements for landscaping which are at least as effective as the Model Ordinance;
- (b) promoting water-efficient landscaping, water use management and water conservation through the use of water-efficient landscaping, functional and limited use of turf grass, and aggressive use of water conserving irrigation technology and management;
- (c) reducing the water demands from landscapes without a decline in the landscape quality or quantity;
- (d) retaining flexibility and encouraging creativity through appropriate landscape design;
- (e) assuring the attainment of water-efficient landscape goals and to comply with state guidelines by requiring that landscapes not exceed a maximum water demand of 70% of its reference evapotranspiration or any lower percentage as may be required by state legislation;
- (f) eliminating water waste from overspray and/or runoff; and
- (g) achieving water conservation by raising public awareness of the need to conserve water through education, training, and motivation to embrace effective water demand management programs.

2) Applicability.

- (a) The water efficient landscape regulations set forth in Section 17.70.070 shall apply to the following landscaping projects:
 - 1. developer installed landscaping in new construction projects for single-family, duplex, or multi-family residential development and commercial and industrial development which have a proposed landscaped area equal to or greater than 2,500 square feet, and are otherwise subject to (A) a discretionary approval of a landscape plan, or (B) a ministerial or building permit for a landscape or water feature;
 - 2. developer installed landscaping in rehabilitation projects for single-family, duplex, or multi-family residential development and commercial and industrial development which (A) have a proposed landscaped area equal to or greater than 2,500 square feet, (B) propose to rehabilitate fifty percent (50%) or more of the existing landscaped area, and (C) are otherwise subject to a discretionary approval of a landscape plan, or a ministerial or building permit for a landscape or water feature;

3. homeowner installed landscaping in new construction projects for single-family, duplex, or multi-family residential property, which have a proposed landscaped area equal to or greater than 5,000 square feet, and are otherwise subject to (A) a discretionary approval of a landscape plan, or (B) a ministerial or building permit for a landscape or water feature;
 4. homeowner installed landscaping in rehabilitation projects for single-family, duplex, or multi-family residential property, which (A) have a proposed landscaped area equal to or greater than 5,000 square feet, (B) propose to rehabilitate fifty percent (50%) or more of the existing landscaped area, and (C) are otherwise subject to a discretionary approval of a landscape plan, or a ministerial or building permit for a landscape or water feature.
- (b) All model homes shall comply with this section and at least one model home in each subdivision shall demonstrate through signs and written information the principles, plants and irrigation technology of water efficient landscaping. Written information shall be provided to home buyers on the design, materials, installation and maintenance of the water efficient landscape.
- (c) In the event covenants, conditions and restrictions are required by the city for any permit subject to this section, a condition shall be incorporated into any related project approval prohibiting the use of water-intensive landscaping and requiring the use of low water use landscaping pursuant to the provisions of this section in connection with common area/open space landscaping. Additionally, such a condition shall also require the covenants, conditions and restrictions to incorporate provisions concerning landscape irrigation system management and maintenance including but not limited to annual audits.

3) **Exceptions.**

The water efficient landscape regulations set forth in Section 17.70.070 do not apply to landscaping projects associated with:

- (a) registered local, state, or federal historical sites;
- (b) ecological restoration projects that do not require a permanent irrigation system;
- (c) mined-land reclamation projects that do not require a permanent irrigation system;
- (d) plant collections, as part of botanical gardens and arboretums open to the public;
- (e) cemeteries existing prior to June 30, 2008; and
- (f) any other new landscaping project and landscape rehabilitation project not listed in Section 17.70.070(A)(2).

4) Procedures.

- (a) Standard landscape design plans shall be downloaded from DiscoverCorona.com or obtained from the Community Development Department for a specific landscaping project type. The landscape design plans shall be completed and shall be submitted by the project applicant to the Building Department for distribution to the Community Development Department, Department of Water and Power, Department of Public Works and the Department of Parks and Community Services for review and approval. Landscape design plans shall be signed by a California registered landscape architect or other licensed or certified landscape professional. The landscape design plans shall include appropriate water use calculations consistent with the calculations as set forth in the Guidelines.
- (b) All landscape design plans must fully address water conservation according to the Guidelines and, as appropriate, Chapter 13.28.
- (c) Pursuant to the city's commitment to water conserving landscapes, all landscape and planting plans must specify plants listed in WUCOLS Guideline for Region 4 (South Inland Valley) that have a water need of medium or lower. Plants listed as high in WUCOLS are prohibited, except those plants specified in bioswales.
- (d) Landscaping projects shall be submitted to the City for plan check and conformance with this Section 17.70.070 and the Guidelines.
- (e) Prior to the issuance of final approval by the city of the landscaping project, the project applicant shall:
 - 1. have a landscape architect or landscape professional visit the landscaping project site to ensure the landscape work has been completed in substantial compliance with the approved landscape design plans, Section 17.70.070, and the Guidelines; and .
 - 2. submit to the city a Landscape Certification Form containing a water conservation certification statement executed by such landscape architect or landscape professional certifying that the landscaping project has been completed and installed in substantial compliance with the approved landscape design plans, Section 17.70.070, and the Guidelines. The signed statement shall read as follows: "I hereby certify, as the landscape architect/licensed landscape professional of record, that the information provided herein meets the requirements and standards as outlined in the Corona Municipal Code Section 17.70.070 and the adopted design guidelines for the development of this project." This statement must be signed and dated with the appropriate license stamp on the title sheet of the project plans subject to review and approval by the city.

5) Plant and irrigation requirements.

- (a) **Plant requirements.**

1. The Guidelines are provided to assist the project applicant in choosing and grouping plant species with similar water demands to facilitate efficient irrigation through use of the water budget formula contained in the Guidelines. The plant list contained and/or referenced in the Guidelines provides a classification of well, moderate, low and very low water use for each plant. In order to incorporate plant species noted as high or plants other than those listed, the project applicant shall provide the Community Development Director with information indicating the water requirements of the species. This information shall include a description of the plant, including but not limited to, its water requirements, field data, and a comparison of the plant to a similar species included in the plant list. The selection of low water use native or drought tolerant plant species is required.
2. Plant types shall be grouped together based on their water, soil, sun and shade requirements and in relationship to the buildings. Plants with different water needs shall be irrigated separately. Plants with the following classifications shall be grouped accordingly: moderate and low, low and very low. Deviation from these groupings shall not be permitted and use of plants with a high water demand are prohibited except when specified in a bioswale.
3. Trees for shade shall be provided for residential, commercial, and industrial buildings, parking lots and open space areas. These trees can be deciduous or evergreen and are to be incorporated to provide natural cooling opportunities for the purpose of energy and water conservation.
4. Post grading soil tests are required on all projects for appropriate specification of soil amendments, and to facilitate selection of water-efficient plant species suitable for the site. Soil amendments, such as compost and fertilizer, shall be provided to improve water holding capacity of soil, where soil conditions warrant and were recommended by soil tests.
5. All exposed surfaces of non-planted areas within the developed landscaped area shall be mulched with a minimum three-inch layer of shredded wood (four inches on planted slopes with point to point irrigation), except in areas with groundcover planted from flats where mulch depth shall be 1-1/2 inches, two inches of decomposed granite, or two inches of colored gravel or crushed rock.
6. Plant palettes for industrial commercial, residential, and multi-family development shall contain trees, mass planting of container shrubs and sub-shrubs in accordance with the applicable Guidelines.
7. Turf grass is prohibited in all commercial and industrial development except in areas dedicated for recreation or other functional needs and shall be in compliance with the water budget formula and specifications contained in the applicable Guidelines.

8. Beginning on January 1, 2010, all developer installed and homeowner installed landscaping projects and rehabilitation projects in single family, multi-family, and duplex developments shall:
 - (a) limit live turf to warm season types only and a maximum of 40% of the front yard landscape on single family homes and duplexes and only in functional and/or recreation use areas on multi-family developments;
 - (b) be prohibited from using live turf in parkways; and
 - (c) be subject to such other conditions and requirements for the installation of landscaping set forth in the Guidelines for residential development.

(b) Irrigation requirements.

1. All irrigation systems shall be designed to prevent runoff, over-spray, lowhead drainage and other similar conditions where water would flow off-site onto adjacent property, non-irrigated areas, walks, roadways, or structures. Commercial and industrial project irrigation systems shall be designed utilizing drip, micro-spray, point-to-point drip or subterranean drip technology and shall be constructed, managed, and maintained to achieve as high an overall efficiency as possible.
2. Cut and fill slopes over four vertical feet shall be landscaped and irrigated utilizing point-to-point drip irrigation and container trees and mass planted shrubs and mulch in accordance with the Guidelines.
3. Dedicated landscape water meter, sized and approved by the Department of Water and Power, shall be installed in all non-residential development projects.
4. Smart irrigation controllers shall be installed in all non-residential development projects, unless the use of the property would otherwise prohibit use of a timer. The planting areas shall be grouped in relation to moisture control zones based on similarity of water requirements (such as shrubs separate from groundcover, full sun exposure areas separate from shade areas, top of slope separate from toe of slope).
5. Recycled water shall be used to irrigate all non-residential landscapes as determined by the Department of Water and Power. Provisions for the conversion to a non-potable water system shall be provided within the landscape design plan. Water systems designed to utilize non-potable water shall include a recycled water meter and be designed to meet all applicable standards of the California Regional Water Quality Control Board, California Department of Public Health, and the Riverside County Health Department.
6. Separate valves shall be provided for separate water-use planting areas, so that plants with similar water needs are irrigated by the same irrigation valve.

7. All non-residential irrigation systems shall be designed and installed in accordance with city and state requirements for recycled water.
8. Beginning on January 1, 2010, all developer installed landscaping in new construction projects and rehabilitation projects shall have installed:
 - (a) a smart irrigation controller(s);
 - (b) a rain shut off sensor; and
 - (c) low precipitation irrigation only.
9. Irrigation of all landscaped areas shall be conducted in a manner conforming to the rules, regulations, and requirements, including any established watering windows, and shall be subject to the penalties and incentives for water conservation and water waste prevention set forth in Chapter 13.26 and as determined by the city and implemented by the Department of Water and Power.

6) Implementation.

All landscape design plans submitted shall comply with the following requirements:

- (a) All landscape design plans shall be prepared using the water budget formula contained in the Guidelines. In addition, landscape design plans shall provide a water budget which includes estimated annual water use (in gallons/acre feet) and the area (in square feet/acres) to be irrigated, precipitation rates for each valve circuit, and the irrigation schedules required pursuant to this chapter and the Guidelines. Separate valves shall be provided for separate water-use planting areas, so that plant materials with similar water needs are irrigated by the same irrigation valve. The estimated annual water use, calculated by adding the amount of water recommended in the irrigation schedule shall not exceed the allowable water budget.
- (b) Two irrigation schedules shall be prepared, one for the initial establishment period of six months and one for the established landscape, which incorporate the specific water needs of the plant material throughout the calendar year. The irrigation schedule shall take into account the particular characteristics of the soil; shall be continuously available on site to those responsible for the landscape maintenance; and shall contain specifics as to optimum run time and frequency of watering, and irrigation hours per day. The schedule currently in effect shall be posted at the controller.
- (c) The Estimated Annual Water Use allowed for the landscaped area shall not exceed the MAWA.

7) Compliance.

- (a) The Community Development Director or his or her designee shall have the duty and authority to administer and enforce this section.
- (b) Prior to issuance of a certificate of occupancy for a project subject to this section, a landscape certification and inspection form must be submitted to the Community Development Department certifying that the landscaping has been completed in accordance the approved plans and this section. Verification of compliance of the landscape installation with the approved landscape design plans shall be obtained through a Certificate of Completion as provided in the Guidelines, and where applicable, in conjunction with a certificate of use and occupancy or permit final process.

B) Areas within the public right-of-way.

1) Street tree planting.

- (a) Street tree species shall be from the list approved by the Parks and Recreation Commission.
- (b) Street trees shall be planted with location, spacing and selected species from the approved street tree list as determined by the Director of Parks and Community Services.
- (c) Street trees shall be minimum 24-inch box size at time of installation.

2) Street tree irrigation.

- (a) Automatic irrigation shall be provided in commercial, industrial and multi-family residential projects.
- (b) Automatic irrigation shall also be provided for single-family residences where the street tree is separated from the residence by a fence or wall.

3) Maintenance and guarantee of trees.

- (a) The life and health of the street tree shall be guaranteed by the developer for a period of 360 days at which time the Director of Parks and Community Development shall accept the tree if in a healthy condition. Unhealthy trees shall be replaced by the developer.
- (b) Watering and fertilizing the street tree shall be the responsibility of the adjacent property owner.

C) On-site landscaping.

1) **General conditions.**

- (a) On-site landscape planting and irrigation plans prepared in accordance with the Community Development Director's landscaping standards shall be required for all commercial, industrial and multi-family residential projects. These plans shall be prepared by a California licensed landscape architect for review and approval by the Community Development Director for all areas required to be landscaped, including slope areas, streetscapes, fuel modification zones, re-naturalized natural slopes and open space lots.
- (b) Notwithstanding anything to the contrary stated in this code, all parking areas except those set forth in § 17.76.100(A) shall have landscaping installed according to the following table:

TOTAL NUMBER OF PARKING STALLS	PERCENT (%) OF TOTAL PARKING AREA TO BE LANDSCAPED
0-24	6
25-49	8
50+	10

This landscaping shall be located in such a manner that 50% is distributed within the parking area and 50% is distributed around the perimeter of the parking area. For the required front and street side yard setbacks, credit may be given toward the minimum required landscaping up to a maximum width of four feet or 50%, whichever is the lesser, when parking spaces, excluding driveways, are adjacent to front and street side setback areas.

- (c) The maximum car overhang shall be two and one-half feet. All parking stalls adjacent to planted areas shall have continuous impact curbing not less than six inches in height. Landscaped areas credited toward minimum landscaping requirements shall have minimum width of four feet; provided, however, that areas of permitted parking overhang shall not be credited toward the landscaped area requirements.
- (d) All landscaping in commercial and industrial parking areas shall be surrounded by continuous concrete curbing not less than six inches in height. Landscape curbing in multi-family residential projects shall be six-inch high continuous concrete adjacent to all parking areas and where driveways dead-end into landscaped areas.
- (e) Landscaped areas under ten square feet or adjacent to asphalt drives may utilize redwood headers or a suitable alternative as determined by the Community

Development Director. No landscaped area shall be less than four feet wide at any point (including curbs).

- (f) Landscape planters adjacent to parking stalls shall contain a strip of concrete, six inches by six inches, at the back of the six-inch raised curb designed to accommodate a step-out for motorists exiting parked cars.

2) **Slopes.**

- (a) All graded and compacted slopes over four feet in height with slopes between one and one-half horizontal to one vertical (1-1/2:1) to four horizontal to one vertical (4:1) shall be planted, irrigated and mulched prior to final inspection. Plant materials and methods of planting shall be in accordance with the Guidelines. The plants shall be maintained and watered with low precipitation irrigation systems in such a manner as to show definite signs of growth at the time of final inspection. Spray head irrigation is prohibited.
- (b) All natural slopes with slope gradient of four feet horizontal to one foot vertical (4:1) or greater with a horizontal dimension of four feet or more shall be mass planted with trees and shrubs and be provided with an automatic low precipitation irrigation system and mulched in accordance with the Guidelines. Spray head irrigation is prohibited.
- (c) The owner of any excavated or filled property, or any other person or agent in possession or control of such property, shall maintain all slopes, retaining walls, cribbing, drainage structures and other protective devices.
- (d) Turf areas, where allowed, shall not exceed a slope of three feet horizontal to one foot vertical (3:1).
- (e) Additional slope planting requirements shall be determined in accordance with the Guidelines for commercial and industrial developments adopted pursuant to this section.

3) **Commercial, industrial, multi-family and single-family residential projects.**

- (a) **Commercial and industrial.** Landscape requirements for property located within the commercial zoning districts set forth in Chapter 17.33 and the industrial zoning districts set forth in Chapter 17.44 shall be determined in accordance with the Guidelines for commercial and industrial developments adopted pursuant to this section.
- (b) **Multi-family.** Boulders or rocks used for design enhancement shall be limited to approximately 10% of the total landscaped areas. In addition to the required number of street trees, one tree shall be planted for every 15 linear feet of all narrow and continuous landscaped areas of up to five feet wide. One tree shall be planted for every 200 square feet of landscaped area in all other areas.

- (c) **Single-family.** The front yard landscaped area and irrigation shall be installed in accordance with the Guidelines for residential development on all developer-installed, single-family residential lots prior to the issuance of a certificate of occupancy.

4) **Landscape irrigation.**

- (a) Automatic low precipitation irrigation shall be provided to all landscaped areas, except for warm season turf where permitted.

D) **Maintenance of existing landscaping: onsite and parkway.**

- 1) Owners or tenants of developed property shall maintain their owned or leased property and the parkway adjacent to their property in accordance with the following standards:

- (a) Landscape materials shall be maintained in a healthy, growing condition. Missing, dead or damaged landscape materials shall be removed and replaced to the following standards:

- 1. **Onsite.** The landscaped area must be restored to the approved landscape standard at the time of development. If that landscape standard cannot be determined, the site will be required to meet the landscape standard set by the Planning Director.

- 2. **Parkway.** The parkway landscaped area must be restored with artificial turf and/or drought tolerant groundcover from the city's parkway plant list. Maximum height at maturity shall be no higher than 18 inches or in accordance with industry standards. Decorative rock or pavers may be installed in an existing parkway with automatic irrigation to all street trees. Equal landscape or hardscape materials, including stabilized decomposed granite, may be substituted subject to the approval of the Community Development Director. Equal landscape or hardscape materials may be substituted, subject to the approval of the Director of Parks, and Community Services in accordance with CMC Chapter 12.

- (b) Existing shrubs, flowers, grass and other landscape materials shall be trimmed and edged as necessary to maintain an overall neat and uniform appearance.

- (c) Property maintenance shall include removal of debris, litter and weeds.

- (d) Existing irrigation systems shall be maintained in operable working order.

- 2) Landscape design plans, which shall include any applicable plans for irrigation of the landscaped area, shall be submitted when a Precise Plan application, as defined in CMC Chapter 17.91, is required as part of a Community Development Department project application.

E) **Landscape design Guidelines.**

- 1) The City Council hereby delegates to the Planning Commission the authority and power to establish by resolution, and amend from time to time, guidelines and requirements for the landscaping of property located within the commercial zoning districts set forth in Chapter 17.33 and the industrial zoning districts set forth in Chapter 17.44. Notwithstanding the foregoing, the City Manager or his or her authorized designee may establish any forms or other related documents to administer compliance with the this section.
- 2) The City Council shall adopt guidelines and requirements for the implementation of Section 17.70.070 for residential property. Such Guidelines may be amended from time to time by resolution of the City Council. Notwithstanding the foregoing, the City Manager or his or her authorized designee may establish any forms or other related documents to administer compliance with the this section.

F) Violations and remedies.

- 1) It shall be unlawful for any person to willfully violate the provisions of this Section 17.70.070. A violation of any of these provisions shall be a misdemeanor.
- 2) Any violation of this Section 17.07.070 is subject to the provisions of chapters 1.08 and 1.09 of the Corona Municipal Code.
- 3) In addition to any other remedies provided in the Corona Municipal Code or available under applicable law, the city can alternatively seek injunctive relief in the Superior Court or take enforcement action for violations of this Section 17.70.070.
- 4) In addition to any other remedies provided in the Code, any violation of this Section 17.070.70 may be enforced by civil action brought by the city. In any such action, the city may seek, and the court may grant, as appropriate, any or all of the following remedies:
 - (a) a temporary and/or permanent injunction;
 - (b) assessment of the violator for the costs of any investigation which led to the establishment of the violation and for the reasonable costs of preparing and bringing legal action under this Section 17.70.070;
 - (c) any other costs incurred in enforcing the provisions of this Section 17.70.070; and
 - (d) any other action the city deems appropriate to protect the general welfare and the City's water supplies, and to reduce water consumption in accordance with this 17.70.070.
- 5) The City Manager or his or her designee shall serve an invoice for costs upon the person or responsible person who is subject to a notice of violation, a cease and desist order, or an administrative compliance order. An invoice for costs shall be immediately due and payable to the City. If any person or responsible person fails to either pay the invoice for

costs or appeal successfully the invoice for costs in accordance with this Section 17.70.070, then the City may institute collection proceedings. The invoice for costs may include reasonable attorneys' fees.

- 6) The city shall impose any other penalties or regulatory fees, as fixed from time to time by resolution of the City Council, for a violation or enforcement of this Section 17.70.070.
- 7) In addition to the costs which may be recovered pursuant to Section 1.08.022 of the Code, and in order to recover the costs of the water efficient landscape regulatory program set forth in this Section 17.70.070, the City Council may, from time to time, fix and impose by resolution fees and charges. The fees and charges may include, but are not limited to, fees and charges for:
 - (a) any visits of a landscape inspector, enforcement officer, or other city staff or authorized representative of the city for time incurred for any costs related to inspecting and enforcing compliance with any term or provision of this Section 17.70.070;
 - (b) processing any permits or forms necessary to carry out the provisions of this Section 17.70.070; and
 - (c) any other necessary and appropriate fees and charges to recover the cost of providing the city's water efficient landscape regulatory program as set forth in Section 17.70.070 and the Guidelines.

SECTION 4. CONFLICTING PROVISIONS.

If any provision of Section 17.70.070 are in conflict with each other, other provisions of the City of Corona Municipal Code, the City's general plan, any city adopted specific plan or master plan, any resolution or ordinance of the City, or any state law or regulation, the more restrictive provisions shall apply.

SECTION 5: ADOPTION OF GUIDELINES.

The City Council hereby approves and adopts the Landscape Design Guidelines for Residential Development and Commercial/Industrial Development, attached hereto as Exhibits "A" and "B", respectively to this Ordinance and by this reference incorporated herein, for implementation of this Ordinance and Section 17.70.070 of the Municipal Code. The Guidelines describe the procedures, calculations, design requirements, and verification process for landscaping projects subject to Section 17.70.070. Any amendments, modifications or any other type of change to the Guidelines may be adopted and effectuated by Resolution of the City Council. Notwithstanding the foregoing, the City Manager or his authorized designee is hereby authorized to establish any forms or other related documents to administer compliance with the Guidelines as he deems appropriate and in furtherance of Section 17.70.070.

SECTION 6: EXEMPTION FROM CALIFORNIA ENVIRONMENTAL QUALITY ACT.

The City Council hereby determines that this Ordinance is exempt from review under the California Environmental Quality Act (“CEQA”) (California Public Resources Code Section 21000 et seq.). Pursuant to State CEQA Guidelines section 15307 (14 Cal. Code Regs., § 15307), this Ordinance is covered by the CEQA Categorical Exemption for actions taken to assure the maintenance, restoration, enhancement, or protection of a natural resource where the regulatory process involves procedures for protection of the environment. The adoption of this Ordinance will result in the enhancement and protection of water resources, and will not result in cumulative adverse environment impacts or any other potentially significant impact described in State CEQA Guidelines Section 15300.2. It is therefore exempt from the provisions of CEQA. The City Council hereby directs the City Manager or his designee to prepare and file a Notice of Exemption within five business days following adoption of this Ordinance.

SECTION 7: SEVERABILITY.

The provisions of this Ordinance are severable, and the invalidity of any section, paragraph, phrase, clause, or part of this Ordinance shall not affect the validity or effectiveness of the remainder of this Ordinance.

SECTION 10: EFFECTIVE DATE.

This Ordinance shall become effective thirty (30) days after its adoption in accordance with the provisions of California law.

SECTION 11: City Clerk Certification.

The City Clerk shall certify to the passage of this Ordinance and cause the same or a summary thereof to be published within fifteen (15) days after adoption in a newspaper of general circulation, printed and published in Corona, California.

SECTION 12: A full reading of this Ordinance is hereby waived. This Ordinance was introduced at a regular meeting of the City Council of the City of Corona, California, on _____, 2010, and thereafter adopted at a regular meeting of the City Council held on the ___ day of _____, 2010.

ADOPTED this 17th day of March, 2010.

Mayor of the City of Corona, California

ATTEST:

City Clerk of the City of Corona, California

CERTIFICATION:

I, Jan Bates, Administrative Services Manager/City Clerk for the City of Corona, do hereby certify that the foregoing Ordinance was regularly introduced and adopted by the City Council of the City of Corona, California, at an adjourned meeting thereof held on the 17th day of March, 2010, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAINED:

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the City of Corona, California, this 17th day of March, 2010.

City Clerk of the City of Corona, California

[SEAL]

City of Corona



Landscape Design Guidelines

For

Commercial & Industrial Developments

Adopted by the Planning Commission

September 8, 2008

Revised February 22, 2010

400 South Vicentia Avenue
Community Development Department
Corona, CA 92882-3238
(951) 736-2262

TABLE OF CONTENTS

	Page
1. PURPOSE.....	1
2. APPLICABILITY.....	2
3. CERTIFICATION FOR WATER CONSERVING LANDSCAPES.....	3
4. SUBMITTAL REQUIREMENTS.....	4
a. Project Review.....	4
b. Construction Plans and Specifications Documents	4
5. LANDSCAPE DESIGN.....	5
6. PLANTING PLAN REQUIREMENTS.....	6
12. Trees.....	7
13. Shrubs.....	7
14. Turf	8
15. Slopes.....	8
16. Additional Landscape Requirements.....	9
7. DRAINAGE AND IRRIGATION REQUIREMENTS.....	10
8. PARKWAY AND PUBLIC LANDSCAPING AND IMPROVEMENTS.....	13
9. STANDARD LANDSCAPE PLANS AND SPECIFICATIONS	13
10. WATER BUDGET REQUIREMENTS.....	14
11. MAINTENANCE.....	15
12. CERTIFICATION.....	15
13. FINAL LANDSCAPE INSPECTION.....	16
EXHIBITS AND FIGURES	
EXHIBITS A & B & C	17-19
FIGURE 1-WATER BUDGET FORMULA AND CHARTS.....	20
FIGURE 2-WATER BUDGET WORKSHEET.....	21

1. PURPOSE

- A. The City of Corona has established landscape design guidelines for commercial and industrial developments in order to create pleasant and attractive properties throughout the City. The City believes that proper landscaping in commercial and industrial properties promotes a sense of community, creates a more pleasant living and working environment, and promotes water and resource conservation, including but not limited to, storm water retention/percolation and best management practices. The landscape guidelines complement the mandatory site development regulations contained in the City's Zoning Ordinance and Specific Plans.
- B. The primary purpose of these landscape design guidelines is to provide procedural and design guidance for project applicants proposing landscape installation or landscape rehabilitation projects that are subject to the requirements of the Corona Municipal Code Section 17.70.070. This document is also intended for use and reference by City staff and/or consultants in reviewing and approving designs and verifying compliance with the Corona Municipal Code Section 17.70.070 regulations that are at least as effective as the Department of Water Resources Model Water Efficient Landscape Ordinance.
- C. The landscape design guidelines will be utilized during the City's plan review process to accomplish the goals of:
 - 1. ensuring the highest level of resource conservation including water conservation, ground water recharge, and green waste reduction;
 - 2. promoting the design, installation, and maintenance of water-efficient landscaping, water use management and water conservation through the use of water-efficient landscaping, functional and limited use of turf grass, and aggressive use of water conserving irrigation technology and management.
 - 3. reducing the water demands from landscapes without a decline in the landscape quality or quantity in a manner that conserves regional water resources, by ensuring that landscape projects are not unduly water-needy and that irrigation systems are appropriately implemented to minimize water waste;
 - 4. retaining flexibility and encouraging creativity through appropriate design;
 - 5. complying with state guidelines by requiring that landscapes not exceed a maximum water demand of seventy percent (70%) of its reference evapotranspiration (ETo) or any lower percentage as may be required by state legislation;
 - 6. eliminating water waste from overspray and/or runoff; and
 - 7. establishing procedural and design requirements for water efficient landscaping that are at least as effective in conserving water as the Department of Water Resources Model Water Efficient Landscape Ordinance in compliance with California Government Code section 65591 et seq.

2. APPLICABILITY

A. Unless otherwise specified within an approved Specific Plan for a commercial or industrial development, these landscape design guidelines shall apply to the following landscape projects in the City of Corona:

1. developer installed landscaping in new construction projects which have a landscaped area equal to or greater than 2,500 square feet, and are otherwise subject to:
 - (a) a discretionary approval of a landscape plan, or
 - (b) a ministerial permit or building permit for a landscape or water feature;
2. developer installed landscaping in rehabilitation projects which:
 - (a) have a proposed landscaped area equal to or greater than 2,500 square feet,
 - (b) propose to rehabilitate fifty percent (50%) or more of the existing landscaped area, and
 - (c) are otherwise subject to:
 - (i) a discretionary approval of a landscape plan, or
 - (ii) a ministerial permit or building permit for a landscape or water feature;

B. These landscape design guidelines do not apply to:

1. registered local, State, or federal historical sites;
2. ecological restoration projects that do not require a permanent irrigation system;
3. mined-land reclamation projects that do not require a permanent irrigation system;
4. plant collections, as part of botanical gardens and arboretums open to the public;
5. landscape rehabilitation projects and/or new construction projects that require a temporary overhead spray system;
6. cemeteries; and
7. any other new construction project and landscape rehabilitation project not listed in Municipal Code section 17.70.070(A)(3).

C. On-site and off-site landscaping with automatic irrigation is required for all new construction and landscape rehabilitation projects for commercial and industrial property subject to the provisions of Section 17.70.070 of the Corona Municipal Code (Landscaping, Fences, Walls, and Hedges) and these landscape design guidelines. The landscape guidelines are to be administered by the Community Development Department under the guidance of the Community Development Director. Any decisions of the Community Development Director concerning implementation of these guidelines may be appealed to the Planning Commission. The Planning Commission's decision may be further appealed to the City Council.

- D. Except where the context of such words or phrases clearly indicates a different meaning or construction, the definitions of those certain words, terms, and phrases provided in Section 17.70.015 and Section 17.70.070(A)(2) of the Corona Municipal Code, shall have the same meanings herein.
- E. Other regulations affecting landscape design, installation, and maintenance practices are potentially applicable and should be consulted for additional requirements. These regulations include but may not be limited to:
 - 1. City specific plans, master plans, general plan, or similar land use and planning documents;
 - 2. Corona Municipal Code Chapter 13.26 (Water Conservation);
 - 3. Corona Municipal Code Chapter 13.28 (Recycled Water);
 - 4. Corona Municipal Code Chapter 13.27 (Storm Water Management and Discharge);
 - 5. Corona Municipal Code Chapter 15.36 (Grading Regulations);
 - 6. Corona Municipal Code Title 17 (Zoning);
 - 7. California Government Code sections 65591 et seq.;
 - 8. National Pollutant Discharge Elimination System Permit for the City of Corona's Municipal Separate Storm Sewer System; and
 - 9. any conditions of approval for a specific project.

3. CERTIFICATION FOR WATER CONSERVING LANDSCAPES

- A. In accordance with recommendations and guidelines put forth in state Assembly Bills 2717 and 1881 (California Government Code sections 65591 et seq.) the City of Corona is committed to landscaping that is attractive and professionally designed, that incorporates low water using plant material that is adapted to the inland region of Southern California, and to efficient irrigation systems and technology engineered to maximize water conservation. Landscape architects are expected to make every effort to conserve water in design decisions and choices. As such, each conceptual landscape plan and each set of landscape development plans must contain a "Water Conservation Certification Statement" on the title sheet that reads as follows:

I hereby certify, as the landscape architect licensed landscape professional of record, that the information provided herein meets the requirements and standards as outlined in the Corona Municipal Code Section 17.70.070 and the adopted design guidelines for the development of this project.

This statement must be signed and dated with the appropriate license stamp on the title sheet of the project landscape plans and shall be included in the City of Corona Community Development Department Landscape Certification Form, attached hereto as Exhibit C, and by this reference incorporated herein.

- B. The commitment to water conserving landscapes includes the utilization of a free guide published by the Department of Water Resources entitled: A Guide to Estimating Water Needs of Landscape Plantings in California. This guide is subtitled, The Landscape Coefficient Method and WUCOLS III (Water Use Classifications of Landscape Species). This guideline is available from the: Department of Water Resources, Bulletins and Reports, P.O. Box 942836, Sacramento, CA, 92436-0001, (916)-653-1097 and

4. SUBMITTAL REQUIREMENTS

A. Project Review Submittal

For commercial and industrial developments subject to Section 17.70.070 of the City of Corona Municipal Code and these landscape design guidelines, applicants shall submit the following landscape information to the Community Development Department at the time of Development Plan Review (DPR) or Project Review Committee (PRC):

1. A conceptual landscape plan is required depicting all areas to be planted and irrigated in the proposed commercial and industrial developments. It is recommended that the scale be no greater than 1" = 20' (scale may vary due to size of project).
2. The illustrations shall include paving materials, finishes, plant palettes with WUCOLS III water needs category, notes, call-outs, details and sections, and a water conservation statement as required to communicate the project's design.
3. The design submittal shall include notes confirming the use and specific type of low precipitation automatic irrigation technology and the total square footage of the area to be landscaped and irrigated. All existing utilities must also be identified on the submittal.

B. Construction Plans and Specifications

1. At the time of plan check five sets of detailed construction landscape and irrigation plans are required to be submitted to the Building Division for routing to all other departments.
2. All on-site landscape and irrigation plans must be submitted using the City of Corona On-Site Landscape and Irrigation Standard Plans as explained in Sections 7 and 9.
3. It is recommended that the scale used on plans be no greater than 1" = 20' (scale may vary due to size of project).

- C. All landscape plans for Community Facilities Districts (CFD), Landscape Maintenance Districts (LMD), and/or public rights-of-way shall be submitted to the Public Works Department.

- D. Wall and fence plans shall be submitted to the Building Division separately. The wall and fence plans should be submitted for building plan check simultaneously with the landscape plans.
- E. Street trees are specified by City Staff at DPR and shall be specified on the on-site landscaping plans in accordance with the Standard Plan format. All street trees are to be a minimum of 24 inch boxes or larger.

5. LANDSCAPE DESIGN

All landscaping shall include a combination of water conserving trees, shrubs, sub-shrubs, vines, groundcover, and accent lighting (if desired or conditioned). In addition it is highly encouraged to utilize low impact development (LIDs) methods including porous paving, storm water cisterns, extensive bioswales, and roof gardens. Hardscape and any site amenities including boulders, recycling fountains, walls, art/sculptures, fences and benches shall be included on the plans.

6. PLANTING PLAN REQUIREMENTS

- A. Plants shall be selected based on their required level of maintenance, durability, mature widths and heights, and water requirements and must be listed in WUCOLS III with a water needs category of Very Low, Low, or Moderate (except bioswales which may contain plant material having a “High” water need). Except when utilized in conjunction with the aforementioned bio-swales, plants listed as High in WUCOLS are prohibited.
- B. In order to specify plant species other than those listed in WUCOLS III as a Medium or less water user, the project applicant must provide the Community Development Director with the following:
 - 1. A plant species description, picture, and water requirements from Western Sunset Garden Book or other comparable source.; and
 - 2. A written explanation of why the plant should be used in light of the need to conserve water.
- C. All landscaped planters must contain shredded wood mulch to retain moisture, suppress weeds, and moderate soil temperature. The mulch depth, type, and maintenance frequency must be noted on the plans.
 - 1. All planters (non-slope) must be mulched with a minimum of three inches (measured after settling) of organic wood mulch. Areas of planted groundcover shall be mulched with a minimum of one and a half inches of organic wood mulch. Slope planting with point to point drip or subterranean irrigation requires a minimum of four inches of organic wood mulch.
 - 2. Color enhanced mulches are prohibited.

3. Mulch may be omitted for native re-vegetation projects upon the recommendation of the project biologist and/or the landscape architect or landscape professional with valid reasons.
 4. A minimum of two inch (2") layer of decomposed granite or crushed rock or gravel mulch may be substituted for organic wood mulch when appropriate to the overall landscape design and as approved by the Community Development Director after reviewing a physical sample.
- D. Turf is not permitted in commercial or industrial projects unless it is in an area utilized for functional or recreational use that has been approved as part of the project review.
- E. Plants shall be grouped and irrigated on separate valve zones (hydrozones) based on their water use requirements, slope aspect, and sun/shade micro-climates. Hydrozones are to be labeled and numbered on the plan.
- F. Self-clinging or climbing vines may be required on garden (non-retaining) and trash enclosure walls.
- G. Planting plans shall include:
1. a planting legend including plant symbol, genus, species, common name, container size, mature width and height, on-center spacing, quantity of each type of plant by container size, water needs from WUCOLS III, Region 4 (VL, L, or M), Hydrozone Number as labeled on the plan, planting detail call out, and remarks.;
 2. labels for all existing trees and vegetation that will either remain or be removed.;
 3. the location of street lights.;
 4. location of all proposed area lights in parking lot finger planters.;
 5. property lines, limit-of-work lines, streets, and street names.;
 6. labels for all buildings, driveways, sidewalks, bio-swales, storm water management best management practices, and other hardscape features.;
 7. topographic elevation lines and spot elevations to determine slope. These may be screened back, but must remain legible.;
- H. The planting plans shall be designed in a manner that provides that:
1. no shrubs or trees shall be planted closer than diameter of plant width to any sidewalks, V-ditches, walls or pedestals unless otherwise dictated by field conditions.;
 2. all soil next to curbs and sidewalks shall be graded at one inch to two inches below the finished surface.;
 3. soil amendments shall be added to all planting areas with gradients 2:1 and less in accordance with post grading soil analysis recommendations.;

4. a plan note that requires a post grading agronomic soil analysis and the requirement that contractors amend the soil in accordance with the recommendations of the report.

I. Trees

1. Shade trees must be provided for commercial and industrial parking lot and open space areas. Trees are especially important to break up the massing and reduce the scale of tilt-up and other tall industrial and commercial buildings, as well as to provide shade, and reduce glare and reflection. The trees shall be selected specifically for these purposes. The palette shall include a balance of evergreen and deciduous trees.
2. A minimum of twenty four (24) inch box specimen trees shall be provided on the site based on the following formula: one 24-inch box specimen tree for every 10,000 sq. ft. of gross commercial building area on the property, and one 24-inch box specimen tree for every 20,000 sq. ft. of gross industrial building area on the property.
3. A mix of tree sizes for commercial and industrial sites shall include at least: 25% 15-gallon trees, 70% 24-inch box trees, and 5% 36-inch box trees.
4. A minimum of one (24)-inch box tree shall be provided for every twenty linear feet of all planter areas of four feet to ten feet wide, or one tree for every three parking stalls, whichever tree count is greater.
5. A minimum of thirty-six inch box accent trees (Single or Multi-trunk specimens) or 12 foot (brown trunk) palms are required on all corner planters including all vehicular entries and major corner intersections of project area. They shall also be required at building entries and other public spaces, such as plazas, courtyards, or patio areas.
6. A minimum of one 24-inch box tree shall be planted for every five hundred square feet of landscaping area in all other areas.
7. Root panels and linear barriers are required for all trees planted within a parkway or within 8-feet of any walking or driveable surface in accordance with the Landscape and Irrigation Standard Plans and Specifications.
8. Trees shall not be placed where they interfere with site drainage or overhead and underground utilities. All utilities shall be identified on the base plan.

J. Shrubs

1. Designated landscape areas shall be covered in non-irrigated synthetic turf, groundcover, or mass planted shrubs grouped together based on their water, soil, sun and shade requirements and in relationship to the building(s).
2. Plants with different water needs shall be irrigated separately.
3. Plants with the following WUCOLS III classifications shall be grouped accordingly: moderate and low, low and very low. Plants specified in a bioswale may have a high water use rating. Deviation from these groupings shall not be permitted.

4. All shrubs, specified to be planted in the back or mid-ground of a planter shall be a minimum of 5 gallons in size unless otherwise approved as a part of the design review approval. Sub-shrubs (maximum 18" diameter) shall be specified as foreground planting and must be a minimum of 1 gallon size unless otherwise approved as a part of the design review approval. All shrubs and sub-shrubs must be mass planted and should utilize a variety of shrub species selected from the WUCOLS III plant list.
5. Landscapes consisting of gravel, crushed rock, and/or decomposed granite and boulders with appropriate low water shrub and tree plantings are encouraged.
6. Three (3)-foot high berms or a solid hedge is required along the street setback areas in order to screen the vehicle headlights projecting from parking areas. The height of the berm and or hedge shall be measured from the parking lot grade.
7. All shrubs and sub-shrubs shall be triangular or linear spaced based on the mature diameter of the specified shrubs. Shrubs shall be specified so as to fill the planter when mature and not require shearing or hedging.
8. A minimum of fifteen gallon shrubs will be required to screen electrical transformers, a/c units, backflow devices, trash enclosures, large screen walls, interior truck and yard areas, and all other maintenance (ground) equipment that may be visible to the public. Shrubs are to be kept a minimum of three feet from the doors of the electrical unit or as specified by the utility agency.
9. Trees and shrubs shall strategically be placed to screen/conceal parking areas and truck loading facilities from public view and to interrupt large wall expanses of industrial and commercial buildings.
10. A non-planted 24 to 36 inch wide strip of stabilized decomposed granite or crushed rock is permitted around the foundation of commercial and industrial buildings to facilitate window washing and maintenance.

K. Turf

1. The use of cool season turf in commercial and industrial landscapes is not permitted and the use of warm season turf is only permitted when specified for a functional use.
2. Artificial or synthetic turf is allowed as defined in Corona Municipal Code section 17.70.015 and must be installed per manufacturer's recommendations including a six inch by six inch concrete mow curb separating the synthetic turf from the adjacent shrub planting.
3. Approved turf areas shall not exceed a slope of four feet horizontal to one foot vertical (4:1).

L. Slopes

All natural/manufactured slopes over four feet in height shall be landscaped as follows:

1. All slopes shall contain plantings of trees, shrubs, sub-shrubs and groundcover grouped according to matched hydro-zones.
2. Trees shall be planted at a rate of one (minimum 15 gallon) tree per 400 square feet of slope area. Trees shall be planted from the WUCOLS III plant list for Region 4 with water needs Medium or lower. No less than 50 percent of the trees shall be evergreen trees.
3. Shrubs shall be mass planted, a minimum of five gallon size, on all slopes with triangular spacing at 75% of the mature diameter of the shrub (e.g., a shrub that grows to 20 feet should be spaced at 15 feet on-center or 75% of 20 feet). All plants shall be selected from the WUCOLS III plant list for Region 4 with water needs medium or lower.
4. All groundcovers shall be a minimum of one gallon container size. No hydroseeding is permitted on manufactured or natural slopes.
5. Slopes shall be landscaped with appropriate planting for immediate erosion control. Jute netting is also allowed to be used on commercial/industrial slopes with the approval of the Community Development Director.
6. The owner or developer of any excavated or filled property, or any other person or agent in possession or control of such property, shall maintain all slopes, retaining walls, cribbing, drainage structures and other protective devices.

M. Additional On-site Landscaping Requirements

1. Major project entries and major street corners should be enhanced in their design to include, but not be limited to larger plant materials and decorative monumentation and fixtures.
2. All public exterior areas such as pedestrian plazas, courtyards, and patio areas shall be provided with trees or other landscape features which will provide adequate shade. Seating areas are also encouraged to be placed within these areas.
3. The landscape architect or landscape professional is encouraged to work with the project Civil Engineer to integrate Water Quality and Storm Water Best Management Practices into the landscape design. This includes but is not limited to extensive bio-swales with vegetation and/or large rocks, permeable paving and on-site storm water retention with overflow to the public storm water/flood control system.
4. Parking lot landscape planters, at a minimum width of five (5) feet including curbs (4 feet of plantable area), shall be provided at each end of the parking row. Landscape fingers (5-foot minimum width including curbs and 6 inch concrete step outs) shall be provided in parking lots at a ratio of one for every ten- (10) parking stalls or landscape diamonds (5-foot minimum width) one for every six-6 parking spaces. Fingers, diamonds, and planters shall contain shade trees. The concrete step out strip should not run the entire length of the curb but should be positioned so as to accommodate people exiting vehicles while still allowing adequate space for tree planting.

5. Show the location of proposed parking lot area lights on planting plans including raised concrete light bases which may limit the irrigation and planting in a landscape planter.
6. Parking areas adjacent to interior property lines shall be provided with planters at a minimum width of five feet at the property line. This requirement may be waived on industrial projects with the discretion of the Community Development Director.
7. Parking lot areas within industrial sites that are not visible from a public street or adjacent property may have the landscaping requirements waived in favor of Water Quality and Storm Water Best Management Practices subject to the discretion of the Community Development Director.
8. No landscape area shall have a dimension of less than four (4) feet clear in width except for vine pockets.
9. Concrete curbing is required between landscaping and the parking and driveway areas.
10. The use of any palms on-site shall be no less than 15 feet Brown Trunk Height (BTH).
11. All landscape areas shall be finished with no less than eight (8) inches of amended topsoil. As per the soil analysis recommendation and provided on plans as part of notes/specifications.
12. Boulders and rocks used for enhancement are encouraged.
13. Provide stainless steel backflow preventer enclosures on commercial and industrial properties. Backflow preventers shall not be located within the front setback areas.
14. A three- (3) foot perimeter is required around all fire hydrants. Shrubs or trees shall not be planted in this area. Low growth ground cover may be planted around the fire hydrants.
15. All landscaping planted within fuel modification zones shall be approved by the Fire Department.
16. Interim landscape areas at a minimum shall be covered with a hydro-seed mix to prevent erosion and suppress dust. The area shall be properly maintained by the owner of the property. Automatic irrigation may be is required for commercial properties.

7. DRAINAGE AND IRRIGATION PLAN REQUIREMENTS

- A. Pursuant to current state law, the City requires all water conservation practices to be implemented through landscape design. Water efficient landscapes and proper irrigation designs, along with the selection and use of water conserving plants, turf for functional use areas only, and efficient irrigation is required.
- B. All landscape areas shall be zoned according to the plants water requirements and orientation on the site (north, south, east or west). Irrigation systems shall be designed,

constructed, managed, and maintained to achieve the highest overall efficiency possible. Efficiency is measured by the amount of water beneficially used to sustain plant life divided by the amount of water applied. Efficiency is affected by the attributes of the controller, method of irrigation, irrigation equipment, proper hydrozoning, site topography, condition and size of plants, and weather conditions.

C. Irrigation plans shall be included in the landscape design plans for all industrial and commercial projects, and shall reflect the following minimum design standards:

1. High efficiency irrigation methods including drip, point to point, subterranean, and micro spray technology shall be utilized.
2. Match precipitation rotor heads only shall only be used for approved turf areas and shall be designed and installed with minimal overspray onto paved surfaces, structures, and non-vegetated areas. The design shall be head-to-head coverage.
3. For drip line installations, in-line pressure regulators shall be used per factory recommendations for the specific irrigation products being used. If drip line is being installed, it must be filtered at the valve along with any other necessary equipment.
4. Irrigation systems shall be zoned according to plant water use, slope aspect, and sun/shade microclimate. If low water use plants (that can also survive/flourish with medium water application) are used within a medium water use hydrozone, they must be counted as medium water use in the irrigation water budget calculations.
5. Low head drainage is not permitted on approved turf spray systems.
6. All irrigation plans shall be designed for recycled water use regardless of whether or not recycled water is currently available.
7. All landscapes shall have a dedicated landscape water meter sized and approved by the Corona Department of Water and Power.
8. Projects must include a “smart” irrigation controller with the following attributes:
 - (a) real-time, weather based program adjustment capability.;
 - (b) on-site weather station or external ETo input.;
 - (c) rain sensors shall be placed within an unobstructed natural rainfall area and located above the irrigation spray pattern.;
 - (d) master valve (or simultaneous operations).;
 - (e) flow Sensor.;
 - (f) multiple start times.;
 - (g) a minimum of two programs.
9. Systems shall be scheduled so that the irrigation precipitation rate does not exceed the infiltration rate of the soil.
10. A baseline irrigation schedule shall be provided on the plans for the six-month initial plant establishment period. The contractor shall adjust the schedule to meet site specific requirements and use the baseline schedule to set the weather based

controller. The schedule currently in effect shall be posted in the controller, and shall include the current water alert stage, watering windows, and watering guidelines in effect pursuant to Chapter 13.26 of the City of Corona Municipal Code.

11. A second baseline irrigation schedule shall be provided on the plan which incorporates the specific water needs of the plants throughout the post-establishment calendar year. The contractor shall adjust the schedule to meet site specific requirements and use the baseline schedule to set the weather based controller. The schedule currently in effect shall be posted in the controller.
12. The irrigation schedules shall include the recommended irrigation days per week, number of cycles per day, minutes of run times per cycle, and estimated amount of applied irrigation water, expressed in gallons per month and gallons per year.
13. The controller shall be operational and set to real-time weather prior to the completion of the 90-day maintenance period of the installing contractor.
14. Pressure loss calculations for valve with longest run and highest water demand.
15. The Irrigation Plan shall be prepared at the same scale as the Planting Plan and, at a minimum, shall identify the following:
 - (h) the location and size of service lateral(s) and water meter(s).;
 - (i) the point of connection (POC) location, static pressure at POC, and stated source (Name and phone number) of static pressure.;
 - (j) the total flow rate (gallons per minute) and designed operating pressure (psi) for each overhead spray and/or bubbler circuit, and total flow rate (gallons per hour) and design operating pressure (psi) for each drip and low volume irrigation circuit.;
 - (k) the location, size, and type of all irrigation components including, but not limited to, smart controller, central controller (backflow prevention device, ball valves, anti-drain check valves, pressure supply (main) line, lateral lines, pipe sizing, valves, spray heads, rotors, drip, low volume irrigation equipment, gallons per minute, pressure regulators, and pumps.;
 - (l) hydraulic Calculations, including, but not limited to, Type of Water (Potable or Recycled), Point of Connection #, Water Information Source, Water Meter Size, Flow Available, Static Pressure at POC, Elevation Change, Service Line size, Length of Service Line, Pressure Available, Critical Station Flow, Flow at POC, Residual Flow Available, Pressure Required at Critical Station, Pressure Loss for; fittings, main line, POC to Valve elevation, backflow, Water Meter, Critical Station at POC, Pressure Available, and Residential Pressure Available.;
 - (m) precipitation rate (inches per hour) for each spray type circuit.;
 - (n) an irrigation legend with the symbol, manufacturer name, model number (or non-proprietary description for publicly funded projects), separate symbols for irrigation equipment with different spray patterns, spray radius, and precipitation rate.;

- (o) the location, size, and type (high, medium, low; square footage; shrubs, turf, slope, etc.) of each hydrozone.;
- (p) topographic elevation lines to determine slope.;
- (q) irrigation system details for assembly and installation.;
- (r) Calculation for the project's landscape Water Budget. (See Section 10 of these Guidelines).

D. All landscape and hardscape areas shall have positive drainage away from structures and comply with the applicable requirements of Corona Municipal Code Chapter 13.27 (Storm Water Management and Discharge).

8. PARKWAY AND PUBLIC LANDSCAPING AND IMPROVEMENTS

The median, areas of public right-of-way, slopes, reverse frontages (private landscape outside a perimeter wall), and any adjoining Community Facilities District (CFD) or Landscape Maintenance District (LMD) lots shall be improved with landscaping and irrigation in accordance with the requirements of the Public Works and Parks and Community Services Departments.

9. STANDARD LANDSCAPE PLANS AND SPECIFICATIONS

- A. The City of Corona requires that all landscape and irrigation plans be submitted for plan check using the City's Standard Landscape Plans and Specifications. The Standard Landscape Plans and Specifications can be downloaded from DiscoverCorona.com/Government/Departments/CommunityDevelopment/LandscapeForms/StandardPlans/Industrial/Commercial. These standard plans are available in 24" X 36" or 30" X 42" dwg format. They can also be purchased from the Community Development Department at Corona City Hall, 400 South Vicentia, Room 120, Corona, CA.
- B. Included in the Standard Plans are the Title Sheet; Project Specific Irrigation design blank sheet; Standard Irrigation Notes, Details, and Specifications; project specific blank sheet(s) for Tree, Shrub, Vine, and Groundcover plan; and Standard Planting Notes, Details, and Specifications. Other sheets may be added as necessary to complete the project set. A complete submittal package shall include the following plans: Title Sheet, Hardscape/Construction Plan, Grading and Drainage, Irrigation, Planting, Sections and profiles of landscape as necessary.
- C. All plants should be selected and placed in accordance with the recommendations from the "Water Use Classifications of Landscape Species (WUCOLS III) available at www.ca.water.gov. WUCOLS III estimates irrigation water needs of landscape plantings in California and is the best resource available to select plants appropriate to the climate in Corona. All plants specified on planting plans must be listed in WUCOLS III, Regional Evaluation 4, as Moderate (M) water use or less (Low (L) or Very Low (VL)) and must be non-invasive. Plants specified in bioswales may have a "High" water need. Other plants not listed in WUCOLS or are listed as High (H) water needs that do well in

the City of Corona may also be proposed with the approval of the Community Development Director.

- D. The landscape contractor, developer, and/or property owner, respectively, shall be responsible to fully comply with Section 17.70.070 of the Corona Municipal Code and these landscape design guidelines.

10. WATER BUDGET REQUIREMENTS

- A. Water budgets are used to assist designers and governing authorities. They are a tool to verify compliance with the state requirements for water conservation and they assist with water demand management. A water budget determines how much water a particular landscape needs over a specified period of time. The Maximum Annual Water Allowance (MAWA) is calculated and compared to the Estimated Annual Water Use (EAWU) to verify that the project landscaping is not exceeding the allowed water use.
- B. The City of Corona uses the formula and tables included in Figure 1, attached hereto and by this reference incorporated herein, to determine water budgets. Figure 1, the information below, and the sample worksheet following are designed to assist you in calculating a Water Budget for inclusion in your Irrigation Plan.
 - 1. Maximum Annual Water Allowance and Evapotranspiration Rate (ET_o). ET_o, or Annual Reference Evapotranspiration Rate, is the quantity of water evaporated from adjacent soil surfaces and transpired by plants in terms of inches for a particular climate zone. Your total square footage of landscape and ET_o are essential components of the MAWA formula.
 - 2. The reference ET_o for Corona is taken from the California Irrigation Management Information System (CIMIS) Station #44 at UCR and is 56.37 and has been entered into the Landscape Water Budget Formula.
 - 3. Estimated Annual Water Use (EAWU). The formula for EAWU is calculated for each hydrozone separately, and then the total of all hydrozones is divided by the Irrigation System Operation Efficiency (IS). In addition to the square footage of each hydrozone, the EAWU calculation relies on several other key factors. One is the average Plant Factor (PF) that is established by the WUCOLS III for plants that are considered high, medium, low, and very low based on their water requirements. For purposes of the Water Budget Formula, turf is considered to have a high (H) water requirement. Refer to Chart 2 in Exhibit B (Factors Used in Water Budget Formula), attached hereto and by this reference incorporated herein, to establish the PF for each hydrozone and enter the number in Space D of the Water Budget Formula on Figure 1. Plant categories used in the calculation must be from WUCOLS III, Regional Zone 4 for Corona.
 - 4. Another key factor in calculating EAWU is the Irrigation Efficiency (IE). The IE is derived from measurements and estimates of the irrigation application method performance within controlled environmental conditions. Chart 3 provides the IE factor to be used in Space F of the Water Budget Formula on Figure 2.

5. The final factor in calculating EAWU is the Irrigation System Operation Efficiency. This number is derived from the efficiency of the controller. Since “smart” controllers are required by ordinance, the IS factor shall be 0.85. This figure has been inserted in the Water Budget Formula for you.
6. To finalize the Water Budget Calculations add together the EAWU for each hydrozone within the proposed project. This will be the Sub-Total WAWU. Next, divide this number by .85 (IS for Smart Controllers). The resulting number will be the Total EAWU. Subtract the Total EAWU number from the MAWA. The resulting number must be positive. If the number is negative, then adjustments will need to be made to the planting plan (e.g. use more plant types that consume less water) and /or the Irrigation Plan (e.g. use more efficient application methods).
7. A water budget formula shall be completed and included on all Irrigation plans submitted to the City of Corona for plan check. A blank Water Budget Form is provided as Figure 2 and also may be downloaded from the City’s web site at [DiscoverCorona.com/CityDepartments/CommunityDevelopment/LandscapeForms/Water Budget Form](http://DiscoverCorona.com/CityDepartments/CommunityDevelopment/LandscapeForms/WaterBudgetForm).

11. MAINTENANCE

- A. Landscape areas shall be maintained to ensure optimal plant health and water efficiency. A regular maintenance schedule shall include, but not limited to checking, adjusting and repairing irrigation equipment, resetting automatic controllers, aerating and detaching turf areas, replenishing mulch, fertilizing, pruning and weeding.
- B. Repair of irrigation equipment shall be done with the originally specified materials or their equivalents.
- C. All Landscape Plans shall contain an Affidavit of Maintenance Responsibility on the title sheet. The Maintenance Affidavit must commit the developer and/or landscape contractor to guarantee and maintain all landscape areas for a minimum of 90 days after completed installation. The Affidavit must also commit the party responsible for perpetual maintenance. On-site trees shall be guaranteed for a period no less than six (6) months. Landscape areas shall be maintained in original condition as approved on the landscape plans even after the Certificate of Occupancy is issued.

12. CERTIFICATION

- A. Landscape certification forms shall be completed by the landscape architect or landscape professional of record. The landscape architect or landscape professional shall visit the site to ensure landscape work has been completed in substantial compliance with the approved plans, Section 17.70.070 of the City of Corona Municipal Code, and these landscape design guidelines. The Certificate of Completion, attached hereto as Exhibit C, and be this reference incorporated herein, shall specifically indicate that plants were installed as specified by the landscape design plan, that the irrigation system was installed as designed, that a post grading agronomic soils analysis has been performed and that the

soil has been amended per the recommendations of the report, and that an irrigation audit has been performed. The certificate shall also include a list of any identified installation deficiencies.

- B. Final approval is required by the City's landscape inspector. Installation of all landscape materials and irrigation system(s) must be complete before the City's landscape inspector inspects the commercial/industrial site.

13. FINAL LANDSCAPE INSPECTION

- A. Upon field inspection, the following must be in place and available for inspection:
 - 1. a Landscape Certification Form filled out and signed by the landscape architect or landscape professional of record;
 - 2. a post grading soil analysis and soil amendment in place as recommended by the report.;
 - 3. a complete irrigation system installed per plan, details, specifications, and notes.;
 - 4. a complete planting installed per plan, details, specifications, and notes.; and
 - 5. approved Building Division plans to confirm that all planting areas on-site have been improved.

EXHIBIT A

FACTORS USED IN WATER BUDGET FORMULA

CHART 1: THE ETO FOR CORONA IS 56.37 AND HAS BEEN ENTERED IN THE LANDSCAPE WATER USE CALCULATION SHEET

CIMIS Station	Name	Reference ETo
44	UC Riverside (Riverside)	56.37

CHART 2: DETERMINING YOUR PLANT FACTOR (PF)
INSERT YOUR PLANT FACTOR IN SPACE D OF THE
LANDSCAPE WATER USE CALCULATION SHEET

Plant Category	Average PF
High	0.8
Medium	0.5
Low	0.2
Very Low	0.1

CHART 3: LOCATING YOUR IRRIGATION EFFICIENCY (IE) FACTOR
INSERT YOUR NUMBER IN SPACE F OF THE
LANDSCAPE WATER USE CALCULATION SHEET

Application Method	IE Factor
Drip	0.90
Bubblers	0.85*
MP Rotators	0.75
Rotors	0.75
Microsprays	0.70
Spray Heads	0.60
*With proper run times	

EXHIBIT B

LANDSCAPE WATER USE CALCULATION SHEET

1 MAXIMUM ANNUAL WATER ALLOWANCE (MAWA)

INPUT the total square footage of landscape = x .62
 Corona Historic ETo x .8
 MAWA = gal / yr
 748
 MAWA = ccf

2 ESTIMATED ANNUAL WATER USE (EAWU)

Hydrozone #1

INPUT hydrozone irrigation efficiency =
 INPUT square footage of hydrozone = INPUT Plant Factor= (low)
 EAWU = gal / yr

Total your Hydrozones

+ + + =

Finding Total (EAWU)

SubTotal EAWU =	<input type="text" value="H"/>	cu ft / yr
Input Irrigation System Operation Factor	0.85	
Total EAWU=	<input type="text" value="I"/>	

Finding Your Total Allowance

MAWA - EAWU = cu ft / yr
(this number must be positive)

For Lanscape Architect's Use in Design

EXHIBIT C

CERTIFICATE OF COMPLETION

I hereby certify that:

(1) I am a professional appropriately licensed in the State of California to provide professional landscape design services. The landscape project for the property located at _____

_____ (provide street address or parcel, tract, or lot number(s)) was installed by me or under my supervision. (Attached additional sheets as necessary.)

(2) The landscaping for the identified landscape project has been installed in substantial conformance with the approved landscape design plan, and complies with the requirements of the City of Corona Municipal Code section 17.70.070 and the Landscape Design Guidelines for Commercial and Industrial Development for the efficient use of water in the landscape. The landscaping was installed as specified by the landscape design plan, the irrigation system was installed as designed, a post grading agronomic soils analysis has been performed, the soil has been amended per the recommendations of the report, and an irrigation audit has been performed.

(3) The following is a list of identified installation deficiencies (Attach additional pages if necessary):

(4) The information I have provided in this Certificate of Completion is true and correct and is hereby submitted in compliance with the Landscape Design Guidelines for Commercial and Industrial Development of the City of the City of Corona.

Print Name _____ Title _____ Date _____

Signature _____ License Number _____

Company _____ Address _____

Telephone _____ Fax _____ E-mail Address _____

For City use only.

<input type="checkbox"/> Project Approved <input type="checkbox"/> Project Not Approved
_____ Name Title
_____ Signature Date
Reasons for denial included in attached sheet(s).

Landscape Design Professional's Stamp
(If Appropriate)

--

**FIGURE 1
WATER BUDGET FORMULA AND CHARTS**

INSTRUCTIONS FOR FILLING OUT WATER BUDGET FORMULA

1. To find MAWA

STEP 1: Calculate your total square footage of the landscape area and insert that number into Space A. (Round the number to the nearest hundred).

STEP 2: The Reference Evapotranspiration for Corona is 56.37. Insert 56.37 in Space B.

STEP 3: Multiple $A \times .62 \times B \times .8$, put the answer in Space C and divide by 748. This gives you your MAWA in gallons.

2. To find EAWU for each Hydrozone

STEP 1: Find your plant factor (CHART 2) for the hydrozone remembering to use the highest plant factor per hydrozone. If you have medium and a low in the same hydrozone, the factor is medium. Place that number in Space D.

STEP 2: Calculate your square footage for the hydrozone (Round to the nearest hundred) and put number in Space E. Next, insert the hydrozone irrigation efficiency number from (CHART 3) into Space F.

STEP 3: Multiple E_{To} (from Chart 1) $\times D \times E \times 0.62$, then divide that number by $F \times 748$. This will give you the EAWU number for Space G.

STEP 4: Repeat steps 1-3 for each hydrozone.

STEP 5: Add all G's and put number into Space H.

STEP 6: Divide H by .85 and that will give you your Total EAWU (Space I). This is the irrigation system operating efficiency.

STEP 7: To find J, Subtract I (EAWU) from MAWA and that will give you the total water use for the project. The resulting number must be positive.

BE SURE TO RUN EAWU CALCULATION FOR EACH HYDROZONE WITHIN YOUR PROJECT.

FIGURE 2

The following blank work sheet may be modified as-needed for each project and shall be

1 Maximum Annual Water Allocation (MAWA)	
INPUT the total square footage of landscape =	[] x .62
INPUT the Hist. ETo for the area =	[] x .8
	MAWA = _____ gal / yr
	748
	MAWA = []
2 Estimated Annual Water Use (EAWU)	
Hydrozone # 1	INPUT Plant Factor = [] (Turf)
	INPUT square footage of hydrozone = []
INPUT hydrozone irrigation efficiency =	[]
FAWU =	[] cu ft / yr
Hydrozone # 2	INPUT Plant Factor = [] (High)
	INPUT square footage of hydrozone = []
INPUT hydrozone irrigation efficiency =	[]
EAWU =	[] cu ft / yr
Hydrozone # 3	INPUT Plant Factor = [] (Med)
	INPUT square footage of hydrozone = []
INPUT hydrozone irrigation efficiency =	[]
EAWU =	[] cu ft / yr
Hydrozone # 4	INPUT Plant Factor = [] (Low)
	INPUT square footage of hydrozone = []
INPUT hydrozone irrigation efficiency =	[]
EAWU =	[] cu ft / yr
Hydrozone # 5	INPUT Plant Factor = [] (Very Low)
	INPUT square footage of hydrozone = []
INPUT hydrozone irrigation efficiency =	[]
EAWU =	[] cu ft / yr
	SubTotal EAWU = [] cu ft / yr
	Input Irrigation System Operation Factor 0.85
	Total EAWU =
	MAWA - EAWU = [] cu ft / yr
	(this number must be positive)

included on all Irrigation Plan submittals.

City of Corona



Landscape Design Guidelines for Residential Development

Adopted by the City Council

January 17, 2001

Revised

February 22, 2010

Community Development Department
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400 S. Vicentia Avenue
Corona, CA 92882

TABLE OF CONTENTS

	Page
1. Purpose.....	1
2. Applicability.....	1
3. Certification For Water Conserving Landscapes.....	3
4. Submittal Requirements.....	4
5. Landscape Design.....	5
6. Planting Plan Requirements.....	5
7. Front Yard Landscape.....	6
Trees.....	6
Hardscape.....	7
Shrubs.....	7
Turf.....	8
Parkways.....	8
8. Slopes.....	9
9. Rear Yards.....	9
9. Drainage and Irrigation.....	9
10. Water Budget Requirements.....	11
11. Certification And Final Landscape Inspection.....	12
12. Maintenance.....	13
13. Model Home Planting.....	13
14. Typical Front Yards, Rear Yards, Slopes and Models.....	13
Exhibits and Figures	
Exhibits A and B – Typical front yard for single family development	15-16
Exhibit C – Slope Planting.....	17
Exhibit D – Factors Used In Water Budget Formula.....	18
Exhibit E – Landscape Water Use Calculation Sheet.....	19
Exhibit F – Certificate of Completion	20
Figures 1 and 2 – Water Budget Formula and Charts.....	21-22

Landscape Design Guidelines for Residential Development

1. PURPOSES

- A. The City of Corona has established landscape design guidelines for residential developments in order to create pleasant and attractive neighborhoods throughout the City. The City believes that proper landscaping in residential properties promotes a sense of community, creates a more pleasant living and working environment, and promotes water and resource conservation, including but not limited to, storm water retention/percolation and best management practices. The landscape design guidelines complement the mandatory site development regulations contained in the City's Zoning Ordinance and Specific Plans.
- B. The primary purpose of these landscape design guidelines is to provide procedural and design guidance for project applicants proposing landscape installation or landscape rehabilitation projects that are subject to the requirements of the Corona Municipal Code Section 17.70.070. This document is also intended for use and reference by City staff and/or consultants in reviewing and approving designs and verifying compliance with the Corona Municipal Code Section 17.70.070 regulations that are at least as effective as the Department of Water Resources Model Water Efficient Landscape Ordinance.
- C. The landscape design guidelines will be utilized during the City's plan review process to accomplish the goals of:
 - Ensuring the highest level of resource conservation including water conservation, ground water recharge, and green waste reduction;
 - Promoting the design, installation and maintenance of water-efficient landscaping, water use management and water conservation through the use of water-efficient landscaping, functional and limited use of turf grass, and aggressive use of water conserving irrigation technology and management;
 - Reducing the water demands from landscapes without a decline in the landscape quality or quantity in a manner that conserves regional water resources, by ensuring that landscape projects are not unduly water-needy and that irrigation systems are appropriately implemented to minimize water waste;
 - Retaining flexibility and encouraging creativity through appropriate design;
 - Complying with state guidelines by requiring that landscapes not exceed a maximum water demand of seventy percent (70%) of its reference evapotranspiration (ET_o) or any lower percentage as may be required by state legislation;
 - Eliminating water waste from overspray and/or runoff;
 - Establishing procedural and design requirements for water efficient landscaping that are at least as effective in conserving water as the Department of Water Resources Model Water Efficient Landscape Ordinance in compliance with California Government Code section 65591 et seq.

2. APPLICABILITY

- A. Unless otherwise specified within an approved Specific Plan for a single family, duplex, and multi-family residential development, these landscape design guidelines shall apply to the following landscape projects in the City of Corona:

Landscape Design Guidelines for Residential Development

1. Developer installed landscaping in new construction projects which have a proposed landscaped area equal to or greater than 2,500 square feet, and are otherwise subject to:
 - a. A discretionary approval of a landscape plan, or
 - b. A ministerial permit or building permit for a landscape or water feature;
 2. Developer installed landscaping in rehabilitation projects which:
 - a. Have a proposed landscaped area equal to or greater than 2,500 square feet,
 - b. Propose to rehabilitate fifty percent (50%) or more of the existing landscaped area, and
 - c. Are otherwise subject to:
 - i. A discretionary approval of a landscape plan, or
 - ii. A ministerial permit or building permit for a landscape or water feature;
 3. Homeowner installed landscaping in new construction projects which have a proposed landscaped area equal to or greater than 5,000 square feet, and are otherwise subject to:
 - a. A discretionary approval of a landscape plan, or
 - b. A ministerial permit or a building permit for a landscape or water feature;
 4. All homeowner installed landscaping in rehabilitation projects which:
 - a. Have a proposed landscaped area equal to or greater than 5,000 square feet,
 - b. Propose to rehabilitate fifty percent (50%) or more of the existing landscaped area, and
 - c. Are otherwise subject to:
 - i. A discretionary approval of a landscape plan, or
 - ii. A ministerial permit or building permit for a landscape or water feature.
- B. These landscape design guidelines do not apply to:
1. Registered local, State, or federal historical sites;
 2. Ecological restoration projects that do not require a permanent irrigation system;
 3. Mined-land reclamation projects that do not require a permanent irrigation system;
 4. Plant collections, as part of botanical gardens and arboretums open to the public;
 5. Landscape rehabilitation projects and/or new construction projects that require a temporary overhead spray system;

Landscape Design Guidelines for Residential Development

6. Cemeteries; and
 7. Any other new construction project and landscape rehabilitation project not listed in Municipal Code section 17.70.070(A)(3).
- C. On-site and off-site landscaping with automatic irrigation is required for all developer, property owner, association, or property manager single-family, duplex, and multi-family residential projects subject to the provisions of Section 17.70.070 of the Corona Municipal Code (Landscaping, Fences, Walls, and Hedges) and these landscape design guidelines. The landscape design guidelines are to be administered by the Community Development Department under the guidance of the Community Development Director. Any decisions of the Community Development Director concerning implementation of these guidelines may be appealed to the Planning Commission. The Planning Commission's decision may be further appealed to the City Council.
- D. Except where the context of such words or phrases clearly indicate a different meaning or construction, the definitions of those certain words, terms, and phrases provided in Section 17.70.015 and 17.70.070(A)(2) of the Corona Municipal Code, shall have the same meanings herein.
- E. Other regulations affecting landscape design, installation, and maintenance practices are potentially applicable and should be consulted for additional requirements. These regulations include but may not be limited to:
1. City specific plans, master plans, general plan, or similar land use and planning documents;
 2. Corona Municipal Code Chapter 13.26 (Water Conservation);
 3. Corona Municipal Code Chapter 13.28 (Recycled Water);
 4. Corona Municipal Code Chapter 13.27 (Storm Water Management and Discharge);
 5. Corona Municipal Code Chapter 15.36 (Grading Regulations);
 6. Corona Municipal Code Title 17 (Zoning);
 7. California Government Code sections 65591 et seq.;
 8. National Pollutant Discharge Elimination System Permit for the City of Corona's Municipal Separate Storm Sewer System; and
 9. Any conditions of approval for a specific project.

3. CERTIFICATION FOR WATER CONSERVING LANDSCAPES

- A. In accordance with recommendations and guidelines put forth in state Assembly Bills 2717 and 1881 (California Government Code sections 65591 et seq.), the City of Corona is committed to landscaping that is attractive and professionally designed, that incorporates low water using plant material that is adapted to the inland region of Southern California, and to efficient irrigation systems and technology engineered to maximize water conservation. Landscape architects and landscape professionals are expected to make every effort to conserve water in design decisions and choices. As such, each conceptual landscape plan and each set of landscape development plans must contain a "Water Conservation Certification Statement" on the title sheet that reads as follows:

Landscape Design Guidelines for Residential Development

I hereby certify, as the landscape architect/licensed landscape professional of record that the information provided herein meets the requirements and standards as outlined in the Corona Municipal Code Section 17.70.070 and the adopted design guidelines for the development of this project.”

This statement must be signed and dated with the appropriate license stamp on the title sheet of the project landscape plans and shall be included in the City of Corona Community Development Department Landscape Certification Form, attached hereto as Exhibit F, and by this reference incorporated herein.

- B. The commitment to water conserving landscapes includes the utilization of a free guide published by the Department of Water Resources entitled: A Guide to Estimating Water Needs of Landscape Plantings in California. This guide is subtitled, The Landscape Coefficient Method and WUCOLS III (Water Use Classifications of Landscape Species). This guideline is available from the: Department of Water Resources, Bulletins and Reports, P.O. Box 942836, Sacramento, CA 92436-0001, (916) 653-1097, and www.water.ca.gov.

4. SUBMITTAL REQUIREMENTS

A. Project Review Submittal

1. For any residential landscape project subject to Section 17.70.070 of the City of Corona Municipal Code and these landscape design guidelines, at the time of Development Plan Review (DPR) or Project Review Committee (PRC), the project applicant/developer shall submit to the Community Development Department a conceptual landscape plan depicting all areas to be planted and irrigated in the proposed residential development.
2. It is recommended that the scale be no greater than 1" = 20' (scale may vary due to size of project).
3. The illustrations shall include paving materials, finishes, plant palettes with WUCOLS III water needs category, notes, call-outs, details and sections, and a water conservation statement, as required pursuant to Section 3A hereof, to communicate the project's design.
4. The design submittal shall include notes confirming the use and specific type of low precipitation automatic irrigation technology and the total square footage of the area to be landscaped and irrigated. All existing utilities must also be identified on the submittal.

B. Construction Plans and Specifications

- C. At the time of plan check, five sets of detailed construction landscape and irrigation plans are required to be submitted to the Building Division for routing to all other departments.
- D. It is recommended that the scale used on plans be 1" = 20' (scale may vary due to size of project).
- E. All landscape plans for Community Facilities Districts (CFD), Landscape Maintenance Districts (LMD), and/or public rights-of-way shall be submitted to the Public Works Department.
- F. Wall and fence plans shall be submitted to the Building Division separately. The wall and fence plans should be submitted for building plan check simultaneously with the landscape plans.

Landscape Design Guidelines for Residential Development

- G. Street trees are specified by City Staff at DPR and shall be specified on the on-site landscaping plans in accordance with the Standard Plan format. All street trees are to be 24 inch boxes or larger.

5. LANDSCAPE DESIGN

All landscaping shall include a combination of water conserving trees, shrubs, sub-shrubs, vines, groundcover, and accent lighting (if desired or conditioned). In addition, it is highly encouraged to utilize low impact development (LIDs) methods including porous paving, storm water cisterns, extensive bioswales, and roof gardens. Hardscape and any site amenities including boulders, recycling fountains, walls, art/sculptures, fences and benches shall be included on the plans.

6. PLANTING PLAN REQUIREMENTS

- A. Plants shall be selected based on their required level of maintenance, durability, mature widths and heights, and water requirements and must be listed in WUCOLS III with a water needs category of Very Low, Low, or Moderate (except bioswales, which may contain plant material having a "High" water need.) Except when utilized in conjunction with the aforementioned bioswale, plants listed as High in WUCOLS are prohibited.
- B. In order to specify plant species other than those listed in WUCOLS III as a Medium or less water user, the project applicant must provide the Community Development Director with the following:
 - 1. A plant species description, picture, and water requirements from Western Sunset Garden Book or other comparable source; and
 - 2. A written explanation of why the plant should be used in light of the need to conserve water.
- C. All landscaped planters must contain shredded wood mulch to retain moisture, suppress weeds, and moderate soil temperature. The mulch depth, type, and maintenance frequency must be noted on the plans.
 - 1. All planters (non-slope) must be mulched with a minimum of three inches (measured after settling) of organic wood mulch. Areas of planted groundcover shall be mulched with a minimum of one and a half inches of organic wood mulch. Slope planting with point to point drip or subterranean irrigation requires a minimum of four inches of organic wood mulch.
 - 2. Color enhanced mulches are prohibited.
 - 3. Mulch may be omitted for native re-vegetation projects upon the recommendation of the project biologist and/or the landscape architect or landscape professional with valid reasons.
 - 4. A two inch (2") layer of decomposed granite or crushed rock or gravel mulch may be substituted for organic wood mulch when appropriate to the overall landscape design and as approved by the Community Development Director after reviewing a physical sample.
- D. Turf is not permitted in multi-family residential projects unless it is in an area utilized for functional or recreational use that has been approved as part of the project review. See the discussion regarding "Turf" section 7(D)(4) of these landscape design guidelines for additional information regarding turf in single family and duplex residential projects.
- E. Plants shall be grouped and irrigated on separate valve zones (hydrozones) based on their water use requirements, slope aspect, and sun/shade micro-climates. Hydrozones are to be labeled and numbered on the plan.
- F. Self-clinging or climbing vines may be required on garden (non-retaining) and trash enclosure walls.

Landscape Design Guidelines for Residential Development

G. Planting plans shall include:

1. A Planting Legend, including plant symbol, genus, species, common name, container size, mature width and height, on-center spacing, quantity of each type of plant by container size, water needs from WUCOLS III, Region 4 (VL, L, or M), Hydrozone Number as labeled on the plan, planting detail call out, and remarks;
2. Labels for all existing trees and vegetation that will either remain or be removed;
3. The location of street lights;
4. Property lines, limit-of-work lines, streets, and street names;
5. Labels for all buildings, driveways, sidewalks, bio-swales, storm water management best management practices, and other hardscape features;
6. Topographic elevation lines and spot elevations to determine slope, which may be screened back, but must remain legible; and
7. A plan note that requires a post grading agronomic soil analysis and the requirement that contractors amend the soil in accordance with the recommendations of the report.

H. The planting plans shall be designed in a manner that provides that:

1. No shrubs or trees shall be planted closer than the diameter of plant width to any sidewalks, V-ditches, walls or pedestals unless otherwise dictated by field conditions;
2. All soil next to curbs and sidewalks shall be graded at two inches below the finished surface; and
3. Soil amendments shall be added to all planting areas with gradients 2:1 and less in accordance with post grading soil analysis recommendations.

7. FRONT YARD LANDSCAPE

- A. Builders and developers shall provide professionally designed front yard landscapes for new construction in order to provide an enhanced image and view of homes. The following landscape design guidelines shall guide the landscape architect or landscape professional in the implementation and creation of a neighborhood landscape theme for new construction landscape projects. Homeowner installed landscape projects shall also follow these landscape design guidelines for their front yards. In general, the front yard landscape should reflect the character of the architectural style of the home, which includes plant varieties, color, texture of plant material, diversity, and form.
- B. Pursuant to the City of Corona's commitment to water conserving landscapes, all residential landscape plans must utilize and specify plants listed in WUCOLS Guideline for Region 4 (South Inland Valley) that have a water need of medium or lower. Except for landscaping in bioswales, plants listed as high in WUCOLS are prohibited.
- C. Generally, a mixture of plant materials and paving should be distributed as follows: 40% turf (single family and duplex developments only), 30% shrubs, 30% hardscape (excludes driveway), and two trees. Less turf is always recommended. For multifamily residential developments, the use of shrubs, hardscape and trees shall be increased in place of turf since turf is prohibited in this type of development.
- D. The front yards shall conform to the following criteria:

1. Trees

At least two trees (min. 24 inch box) in addition to the required street trees are to be planted per front yard. Alternatively, three 15 gallon size trees can be used in place of the two 24 inch

Landscape Design Guidelines for Residential Development

box trees where the size of the front yard area allows for such. Corner lots are unique situations and shall have an additional requirement of 1 gallon vines at 10 feet o.c. installed against the street side yard wall.

- The front yard trees shall be planted in informal clusters, creating movement throughout the entire street. Mature tree size and scale should be considered.
- All 24 inch box trees shall be double staked and 15 gallon trees shall be single staked. All trees shall be tied to stakes with a rubber "cinch tie" or equal. All trees in turf areas shall require arbor guards.

2. Hardscape (30%, excluding driveways)

Hardscape in the front yard may consist of the following materials:

- decorative rocks (minimum 3 inches in diameter);
- boulders;
- garden walkways;
- decorative pavers and stepping stones;
- fountains and statues (re-circulating); and
- mulch.

Hardscape materials not listed above are subject to the approval of the Community Development Department.

3. Shrubs (30%)

- Shrubs should be chosen for their ability to reinforce the neighborhood character, which includes plant varieties, color, texture of plant material, diversity, and form.
- A minimum shrub area shall be at least 15% of the total front yard area.
- The minimum shrub specifications shall be 5 gallon size for background/foundation and 1 gallon size for foreground.
- If the planting area allows only a single row, the minimum size shall be 5 gallon. (Refer to Exhibits "A" and "B").
- Each typical front yard shall have a minimum of three 15 gallon accent shrubs, vines, or espaliers, in order to minimize any exposed walls from the streetscape view. This is in addition to the shrubs mentioned above.
- Shrubs are to be spaced a maximum of 75% of their mature growth, i.e., *Raphiolepis Indica* "Pinkie," 4 inch dia. mature size-spaced at 3 feet o.c. (Refer to Exhibit "A").
- All shrub areas shall have ground cover planted at a maximum of 8" o.c. triangular spaced, from rooted cuttings or liners. A wider spacing can be considered for 4 inch pots or 1 gallon sizes.
- A three (3) inch layer of shredded mulch is required under all shrub masses without groundcover.
- One agronomic soils test shall be submitted for each tract at the conclusion of finish grading. The soils lab's recommendations shall be used for both soil conditioning and plant backfill mix.

Landscape Design Guidelines for Residential Development

- All landscape areas shall be finished with no less than eight (8) inches of amended topsoil.

4. Turf (40%)

- Live turf is limited to warm season types and shall not exceed 40% of the total front yard landscaped area on single family homes and duplexes.
- In single family and duplex residential developments, if turf area is reduced to 30% of the front yard landscaped area or less, then shrubs and ground cover areas shall be increased accordingly.
- Live turf is prohibited in multi-family residential developments and may only be used in functional and/or recreation use areas with the approval of the Community Development Department.
- Artificial or synthetic turf is allowed as defined in Section 17.70.015 of the Corona Municipal Code and must be installed per manufacture's recommendations including a six inch by six inch concrete mow curb separating the synthetic turf from the adjacent shrub planting. Approved turf areas shall not exceed a slope of four feet horizontal to one foot vertical (4:1).

5. Parkways

Water efficient landscaping is required for all new construction and rehabilitation projects for residential parkways. A combination of water efficient plants, permitted types of hardscapes, and cedar mulch shall be installed in the parkway. For additional information regarding parkway planting, please refer to the *City of Corona Residential Parkway Landscape Conversion Guidelines*.

- Live turf is prohibited in all new residential parkways. Artificial turf may be permitted in place of live turf. Approval will be on a case-by-case basis.
- Only water efficient ground covers and shrubs as prescribed by the city's Public Works Department that grow no taller than 18 inches are permitted.
- Street trees shall be planted per City of Corona street tree standards. Please contact the Parks and Community Services Department for more information regarding allowable types of street trees and size.
- Fire hydrants shall have a 3-foot (on center) clear area surrounding them, where no planting shall be permitted. This area shall be covered in mulch.
- Concrete, non-pervious pavers, or metal grates are prohibited.
- Pervious decorative pavers are permitted.
- Colored mulch is prohibited. Only cedar mulch, natural colored mulch, or bark is permitted (3 inches minimum depth).
- Decorative rock, red rock, colored rocks, or pea gravel that are less than 3 inches are prohibited.
- Colored rocks are prohibited regardless of size of rock.
- Rocks that are 3 inches or larger are permitted (not grouted in place).
- All rock, bark, and mulch shall be flush to the curb.
- No structures except mailboxes and utilities are allowed in the parkway.

Landscape Design Guidelines for Residential Development

- For existing residential developments, if converting an existing overhead sprinkler system to a water wise drip irrigation system, please visit the following link: <http://www.irrigationtutorials.com/dripguide.htm>

8. SLOPES

All natural and manufactured slopes over 4 feet in height with slopes between 1-1/2:1 to 4:1 (horizontal to vertical) shall be planted and automatically irrigated. Plant materials, quantities, planting design, and irrigation design shall be as per the items listed below. Slopes shall be landscaped with appropriate planting for immediate erosion control.

- A. As a minimum tree planting requirement, all landscaped rear yard or side yard slopes shall have a minimum of two 15 gallon trees;
- B. One 15 gallon tree or larger, for each 400 square feet of slope. No less than 50% of the trees shall be evergreen trees;
- C. Two shrubs for each sixty-four square feet of slope area. The ratio shall be 60% 1 gallon size and 40% 5 gallon size;
- D. Jute netting shall not be used for slope erosion control on residential production slopes unless otherwise specified by the Civil Engineer. Jute netting can be used on commercial/industrial slopes with City approval;
- E. Groundcovers: Rooted cuttings shall be planted at 12 inch o.c. minimum and 24 inch o.c. maximum (triangular spaced), depending on the variety of ground cover used;

9. REAR YARD LANDSCAPE

All landscape projects installed in rear yards and subject to these landscape design guidelines shall comply with the following requirements:

- A. The landscape project shall utilize and specify plants listed in WUCOLS Guideline for Region 4 (South Inland Valley) that have a water need of medium or lower. Except for landscaping in bioswales, plants listed as high in WUCOLS are prohibited.
- B. Live turf in single family and duplex residential developments is limited to warm season types.
- C. Live turf is prohibited in multi-family residential developments and may only be used in functional and/or recreation use areas with the approval of the Community Development Department.
- D. Artificial or synthetic turf is allowed as defined in Section 17.70.015 of the Corona Municipal Code and must be installed per manufacture's recommendations including a six inch by six inch concrete mow curb separating the synthetic turf from the adjacent shrub planting. Approved turf areas shall not exceed a slope of four feet horizontal to one foot vertical (4:1).
- E. The total landscaped area for the property shall comply with the water budget requirements set forth in Section 11 hereof.

10. DRAINAGE AND IRRIGATION

Pursuant to current state law, the City requires all water conservation practices to be implemented through landscape design. Water efficient landscapes and proper irrigation designs, along with the selection and use of water friendly plant material and efficient irrigation is required.

Landscape Design Guidelines for Residential Development

Drainage

- A. All landscape and hardscape areas shall have positive drainage away from structures.
- B. Install a 3-foot wide sidewalk from driveway to side yard fence (Refer to Exhibit "B").
- C. Where side yard drainage swales are affected by improvements, an underground drainage system shall be used.
- D. All landscape and hardscape shall comply with the applicable requirements of Corona Municipal Code Chapter 13.27 (Storm Water Management and Discharge).

Irrigation

- A. All yards shall be automatically irrigated.
- B. All irrigation system(s) shall be professionally designed and installed to achieve maximum water efficiency and to provide 100% head-to-head coverage.
- C. High efficiency irrigation methods including drip, point to point, subterranean, and micro spray technology shall be used for all shrubs and trees.
- D. Where turf is allowed, overhead spray may be used. Match precipitation rotor heads only shall be used and shall be designed and installed with minimal overspray onto paved surfaces, structures, and non-vegetated areas. The design shall be head-to-head coverage.
- E. Irrigation systems shall be zoned according to plant water use, slope aspect, and sun/shade microclimate. If low water use plants (that can also survive/flourish with medium water application are used within a medium water use hydrozone, they must be counted as medium water use in the irrigation water budget calculations.
- F. All natural and manufactured slopes over four vertical feet shall be landscaped and irrigated utilizing point-to-point drip irrigation and container trees and mass planted shrubs and mulch. Spray head irrigation is prohibited.
- G. Irrigations systems shall be installed with a rain shut off sensor.
- H. Irrigation systems shall be installed with smart irrigation controller(s). The smart irrigation controller(s) shall have the following attributes:
 - 1. Real-time, weather based program adjustment capability;
 - 2. On-site weather station or external ETo input;
 - 3. Rain sensors shall be placed within an unobstructed natural rainfall area and located above the irrigation spray pattern;
 - 4. Master valve (or simultaneous operations);
 - 5. Flow sensor;
 - 6. Multiple start times; and
 - 7. Minimum of two programs.
- I. Irrigation systems shall be installed using only low precipitation irrigation.
- J. Irrigation systems shall be scheduled so that the irrigation precipitation rate does not exceed the infiltration rate of the soil.
- K. A baseline irrigation schedule shall be provided on the plans for the six-month initial plant establishment period. The project applicant shall adjust the schedule to meet site specific requirements and use the baseline schedule to set the weather based controller. The schedule currently in effect shall be posted in the controller, and shall include the current water alert stage, watering windows, and watering guidelines in effect pursuant to Chapter 13.26 of the City of Corona Municipal Code.

Landscape Design Guidelines for Residential Development

- L. A second baseline irrigation schedule shall be provided on the plan which incorporates the specific water needs of the plants throughout the post-establishment calendar year. The project applicant shall adjust the schedule to meet site specific requirements and use the baseline schedule to set the weather based controller. The schedule currently in effect shall be posted in the controller.
- M. The irrigation schedules shall include the recommended irrigation days per week, number of cycles per day, minutes of run times per cycle, and estimated amount of applied irrigation water, expressed in gallons per month and gallons per year.
- N. The irrigation controller shall be operational and set to real-time weather prior to the completion of the 90-day maintenance period of the installing contractor.
- O. Pressure loss calculations shall be taken into consideration for the valve with longest run and highest water demand.
- P. The Irrigation Plan shall be prepared at the same scale as the Planting Plan and, at a minimum, shall identify the following:
 - 1. The location and size of service lateral(s) and water meter(s);
 - 2. The point of connection (POC) location, static pressure at POC, and stated source (Name and phone number) of static pressure;
 - 3. The total flow rate (gallons per minute) and designed operating pressure (psi) for each overhead spray and/or bubbler circuit, and total flow rate (gallons per hour) and design operating pressure (psi) for each drip and low volume irrigation circuit;
 - 4. The location, size, and type of all irrigation components including, but not limited to, smart controller, central controller (backflow prevention device, ball valves, anti-drain check valves, pressure supply (main) line, lateral lines, pipe sizing, valves, spray heads, rotors, drip, low volume irrigation equipment, gallons per minute, pressure regulators, and pumps;
 - 5. The Hydraulic Calculations including Type of Water (Potable or Recycled), Point of Connection #, Water Information Source, Water Meter Size, Flow Available, Static Pressure at POC, Elevation Change, Service Line size, Length of Service Line, Pressure Available, Critical Station Flow, Flow at POC, Residual Flow Available, Pressure Required at Critical Station, Pressure Loss for; fittings, main line, POC to Valve elevation, backflow, Water Meter, Critical Station at POC, Pressure Available, and Residential Pressure Available;
 - 6. The precipitation rate (inches per hour) for each spray type circuit;
 - 7. An irrigation legend with the symbol, manufacturer name, model number (or non-proprietary description for publicly funded projects), separate symbols for irrigation equipment with different spray patterns, spray radius, and precipitation rate;
 - 8. The location, size, and type (high, medium, low; square footage; shrubs, turf, slope, etc.) of each hydrozone;
 - 9. Topographic elevation lines to determine slope;
 - 10. Te irrigation system details for assembly and installation; and
 - 11. Calculation for the project's landscape Water Budget. (See Section 11, "Water Budget Requirements" of these landscape design guidelines.)

11. WATER BUDGET REQUIREMENTS

Water budgets are used to assist designers and governing authorities. They are a tool to verify compliance with the state requirements for water conservation and they assist with water demand management. A water budget determines how much water a particular landscape needs over a specified period of time. The Maximum Annual Water Allowance (MAWA) is calculated and

Landscape Design Guidelines for Residential Development

compared to the Estimated Annual Water Use (EAWU) to verify that the project landscaping is not exceeding the allowed water use.

The City of Corona uses the formula and tables included in Figure 1, attached hereto and by this reference incorporated into these landscape design guidelines, to determine water budgets. Figure 1, the information provided below, and the sample worksheet following, are designed to assist the project applicant in calculating a Water Budget for inclusion in his/her Irrigation Plan.

- A. Maximum Annual Water Allowance and Evapotranspiration
- B. Rate (ET_o). ET_o, or Annual Reference Evapotranspiration Rate, is the quantity of water evaporated from adjacent soil surfaces and transpired by plants in terms of inches for a particular climate zone. Your total square footage of landscape and ET_o are essential components of the MAWA formula.
- C. The reference ET_o for Corona (i) is 56.37; (ii) is taken from the California Irrigation Management Information System (CIMIS) Station #44 at UCR; and (iii) has been entered into the Landscape Water Budget Formula.
- D. Estimated Annual Water Use (EAWU). The formula for EAWU is calculated for each hydrozone separately, and then the total of all hydrozones is divided by the Irrigation System Operation Efficiency (IS). In addition to the square footage of each hydrozone, the EAWU calculation relies on several other key factors. One is the average Plant Factor (PF) that is established by the WUCOLS III for plants that are considered high, medium, low, and very low based on their water requirements. For purposes of the Water Budget Formula, turf is considered to have a high (H) water requirement. Refer to Chart 2 in Exhibit D (Factors Used in Water Budget Formula), attached hereto and by this reference incorporated herein, to establish the PF for each hydrozone and enter the number in Space D of the Water Budget Formula on Figure 1. Plant categories used in the calculation must be from WUCOLS III, Regional Zone 4 for Corona.
- E. Another key factor in calculating EAWU is the Irrigation Efficiency (IE). The IE is derived from measurements and estimates of the irrigation application method performance within controlled environmental conditions. Chart 3 of Exhibit D provides the IE factor to be used in Space F of the Water Budget Formula on Figure 2.
- F. The final factor in calculating EAWU is the Irrigation System Operation Efficiency. This number is derived from the efficiency of the controller. Since "smart" controllers are required by ordinance, the IS factor shall be 0.85. This figure has been inserted in the Water Budget Formula for you.
- G. To finalize the Water Budget Calculations, add together the EAWU for each hydrozone within the proposed project. This will be the Sub-Total WAWU. Next, divide this number by .85 (IS for Smart Controllers). The resulting number will be the Total EAWU. Subtract the Total EAWU number from the MAWA. The resulting number must be positive. If the number is negative, then adjustments will need to be made to the planting plan (e.g. use more plant types that consume less water) and /or the Irrigation Plan (e.g. use more efficient application methods).
- H. A water budget formula shall be completed and included on all Irrigation plans submitted to the City of Corona for plan check. A blank Water Budget Form is provided as Figure 2 and also may be downloaded from the City's web site at DiscoverCorona.com/CityDepartments/CommunityDevelopment/LandscapeForms/WaterBudgetForm.

12. CERTIFICATION AND FINAL LANDSCAPE INSPECTION

- A. Landscape Inspection Certification Forms and Certificate of Completion, attached hereto as Exhibit F and by this reference incorporated herein, shall be completed by the Landscape Architect or landscape professional of record. The Landscape Certification Form is available at www.DiscoverCorona.com. The Landscape Architect or landscape professional shall visit

Landscape Design Guidelines for Residential Development

the site to ensure landscape work has been completed in substantial compliance with the approved plans, Section 17.70.070, and these landscape design guidelines. Please see page 20 for minimum standards for inspections under "Typical Front Yards, Rear Yards, Slopes, and Models."

- B. Final approval is required by the City's landscape inspector. Installation of all landscape materials and any irrigation system must be complete before the City's landscape inspector inspects lots a landscape project.

13. MAINTENANCE

- A. The developer shall guarantee individual front yards/, slopes, parkways, and rear yards for a minimum of 90 days after completed installation.
- B. On-site trees shall be guaranteed for a period no less than six (6) months.

14. MODEL HOME PLANTING

Pursuant to state law, the City encourages all water conservation practices through the use of water efficient landscapes and proper irrigation design. This is achieved by the selection and use of water friendly plant material, reduced turf areas and irrigation schedules.

- A. Each model home shall display different landscape designs and materials for each residential model.
- B. Model homes shall be used as a way to demonstrate and encourage water conservation.
- C. Signs and exhibits shall be posted at one for each model home to demonstrate water conservation through its landscape design concept. Written information shall be provided to all homebuyers. The signage and literature shall clearly state the design concept, materials and water efficient practices implemented to achieve this concept. Written information shall be available in the sales office.
- D. New homeowners shall be given a brochure/handout explaining optimal settings for their irrigation system(s), current water alert stage, watering windows, and watering guidelines in effect pursuant to Chapter 13.26 of the City of Corona Municipal Code. This will encourage efficient watering and provide common water conservation practices to the homeowner.
- E. New homeowners shall also be given a brochure/handout explaining how to care for the species located on their property.
- F. If the development contains CC&Rs, a condition shall be incorporated into any related project approval prohibiting the use of water-intensive landscaping and requiring the use of low water use landscaping pursuant to the provisions of this section in connection with common area/open space landscaping. Additionally, such a condition shall also require the CC&Rs to incorporate provisions concerning landscape irrigation system management and maintenance including but not limited to annual audits.

15. TYPICAL FRONT YARDS, REAR YARDS, SLOPES, AND MODELS

The following list of items shall be used to acknowledge the completion of landscape work in substantial compliance with the City approved plans, specifications, and landscape design guideline requirements (including but not limited to the landscape fine grading, landscape drains and drainage, irrigation systems, landscape planting and general site clean-up):

- A. a visual field inspection of the irrigation systems and components prior to backfill and complete installation;
- B. an irrigation coverage test;

Landscape Design Guidelines for Residential Development

- C. verification of soils test analysis and soil preparation for all planting areas.;
- D. observation of all plant material prior to installation;
- E. inspection of planting locations, details and installation as per approved plans;
- F. observation of finish grading, drainage swales and side yard drains, including drains under side yard areas;
- G. an overall field review of all plan items, including but not limited to the following items: backfill mix for all plants, plant fertilizer tablets, water basins for all plants, mulch in all planters, proper tree staking, hydroseed mix batch ticket, (90) day maintenance compliance form, and completion of the "Landscape Certification & Inspection Form"; and
- H. observation of the overall site appearance including removal of all construction debris, trash, paint rinse water, stucco over-spray, broken plant material, large rocks, etc.

EXHIBIT A

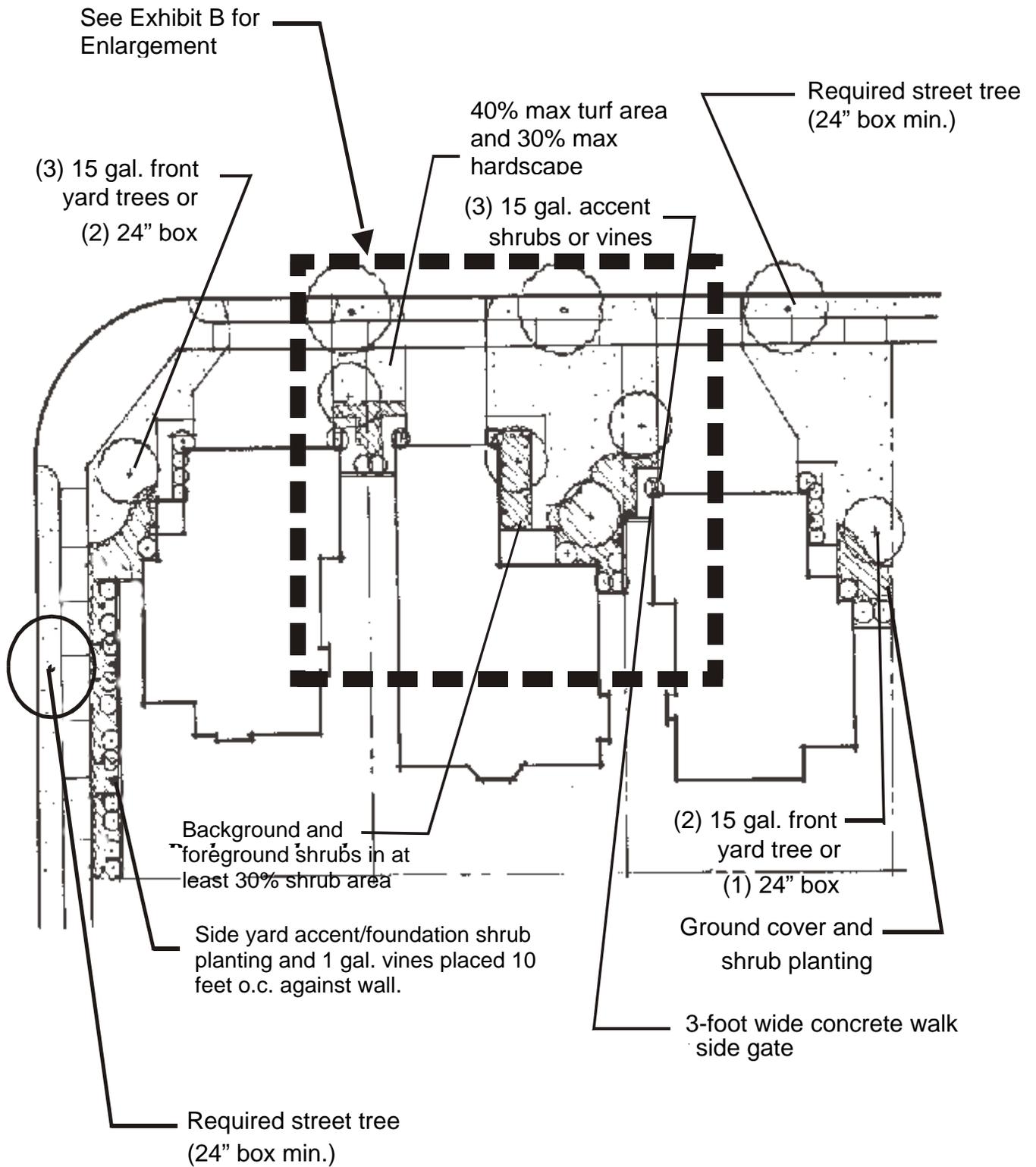


EXHIBIT B

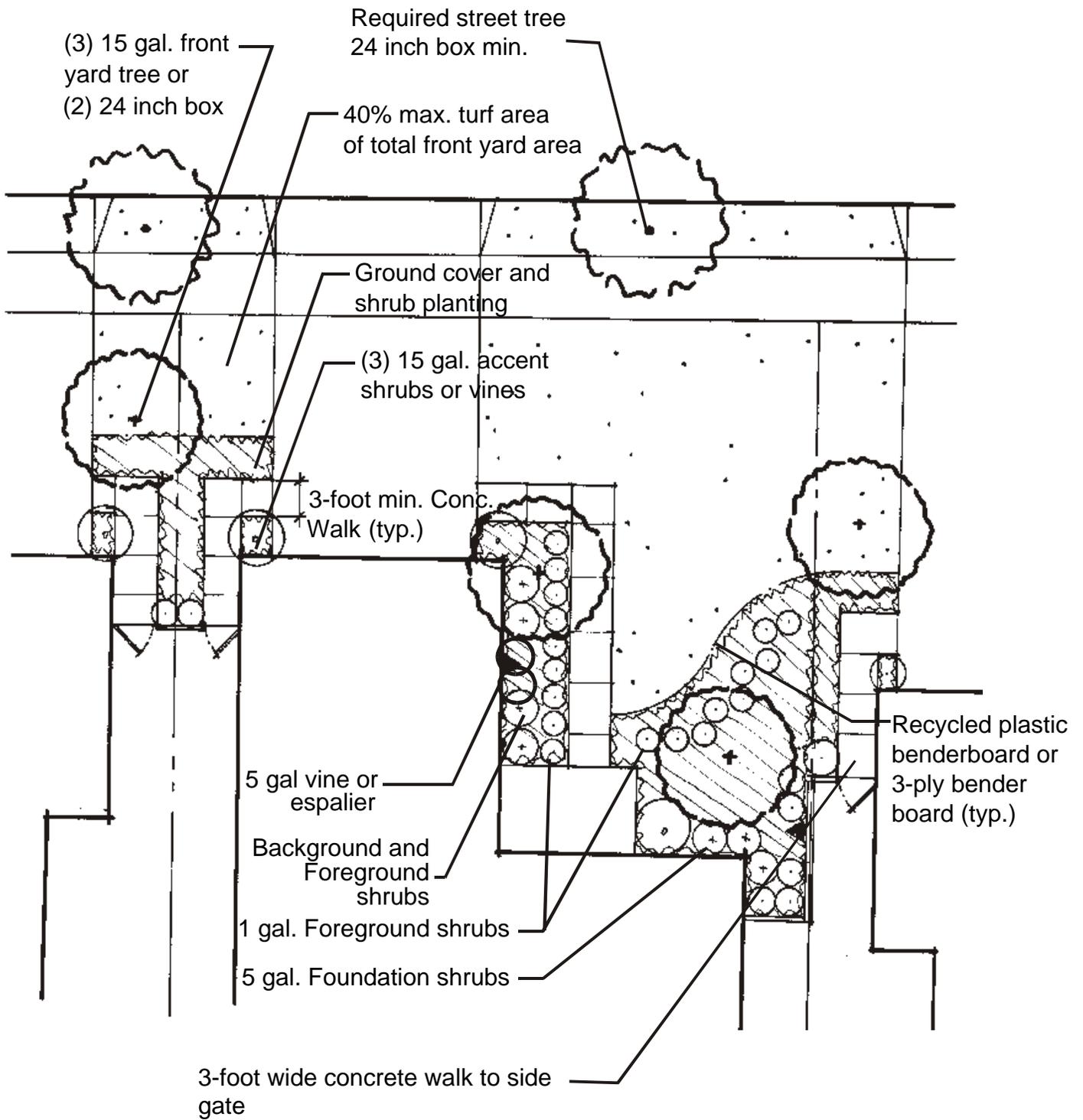


EXHIBIT C

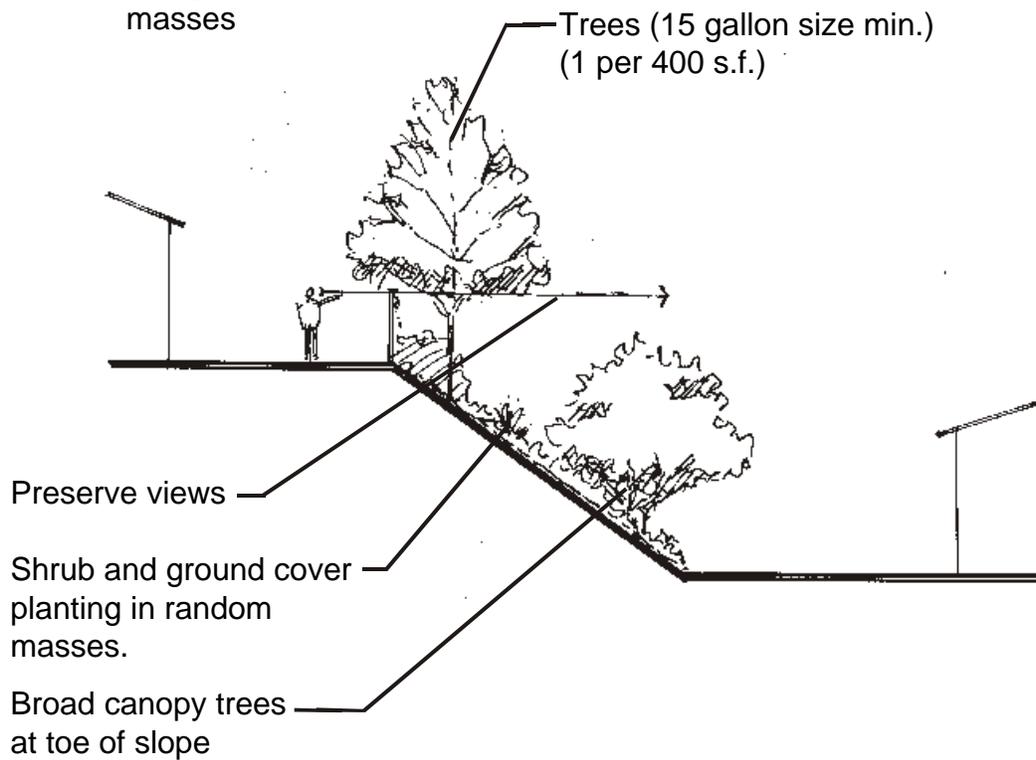
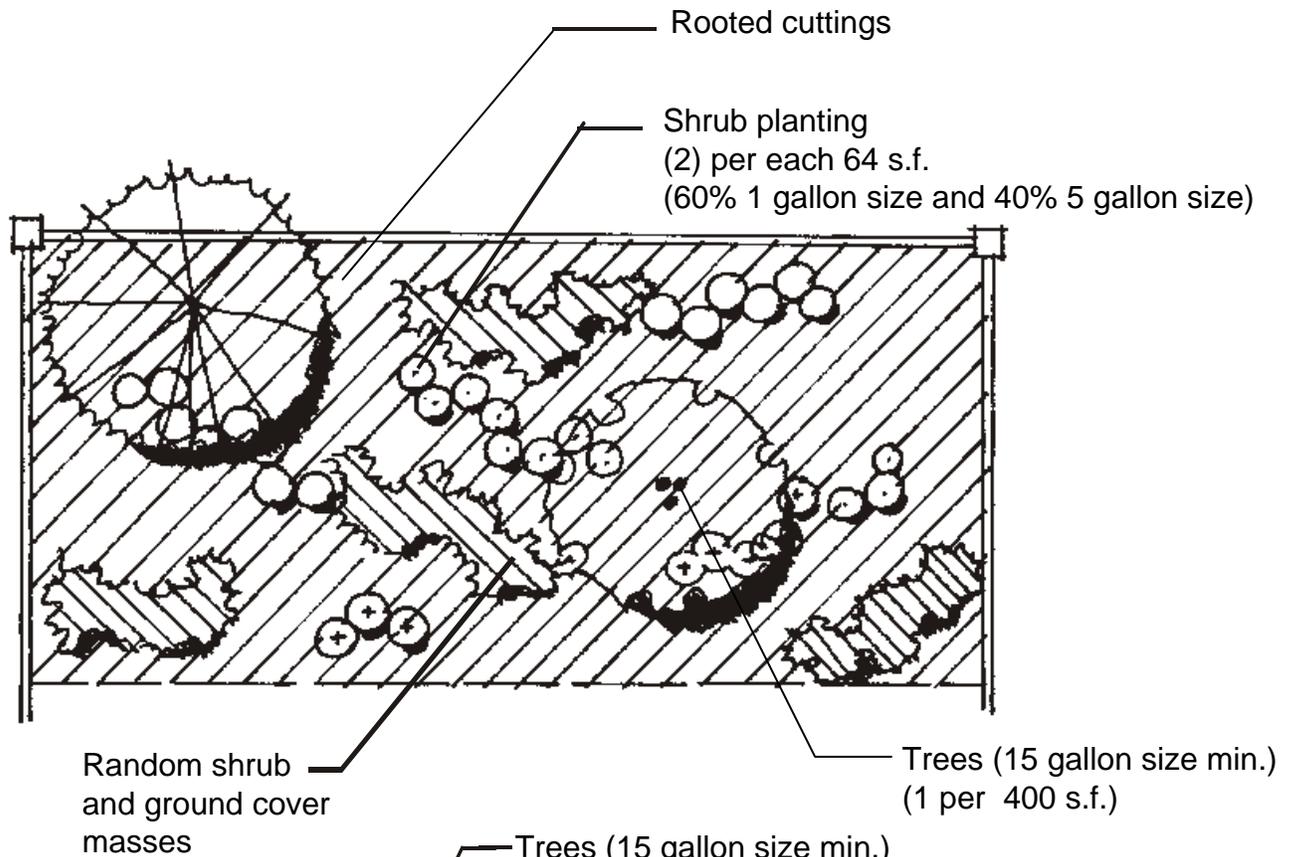


EXHIBIT D

FACTORS USED IN WATER BUDGET FORMULA

CHART 1: THE ETO FOR CORONA IS
56.37 AND HAS BEEN ENTERED IN THE
LANDSCAPE WATER USE CALCULATION SHEET

CIMIS Station	Name	Reference ETo
44	UC Riverside (Riverside)	56.37

CHART 2: DETERMINING YOUR PLANT FACTOR (PF)
INSERT YOUR PLANT FACTOR IN SPACE D OF THE
LANDSCAPE WATER USE CALCULATION SHEET

Plant Category	Average PF
High	0.8
Medium	0.5
Low	0.2
Very Low	0.1

CHART 3: LOCATING YOUR IRRIGATION EFFICIENCY (IE) FACTOR
INSERT YOUR NUMBER IN SPACE F OF THE
LANDSCAPE WATER USE CALCULATION SHEET

Application Method	IE Factor
Drip	0.90
Bubblers	0.85*
MP Rotators	0.75
Rotors	0.75
Microsprays	0.70
Spray Heads	0.60

*With proper run times

EXHIBIT E

LANDSCAPE WATER USE CALCULATION SHEET

1 MAXIMUM ANNUAL WATER ALLOWANCE (MAWA)

INPUT the total square footage of landscape = x .62
 Corona Historic ETo x .8
 MAWA = gal / yr
 748
 MAWA = ccf

2 ESTIMATED ANNUAL WATER USE (EAWU)

Hydrozone #1

INPUT square footage of hydrozone = (low)
 INPUT Plant Factor =
 INPUT hydrozone irrigation efficiency =
 EAWU = gal / yr

Total your Hydrozones

+ + + =

Finding Total (EAWU)

SubTotal EAWU =	<input type="text" value="H"/>	cu ft / yr
Input Irrigation System Operation Factor	0.85	
Total EAWU =	<input type="text" value="I"/>	

Finding Your Total Allowance

MAWA - EAWU = } cu ft / yr
 (this number must be positive)

For Landscape Architect's Use in Design

EXHIBIT F

CERTIFICATE OF COMPLETION

I hereby certify that:

(1) I am a professional appropriately licensed in the State of California to provide professional landscape design services. The landscape project for the property located at:

_____ (provide street address or parcel, tract, or lot number(s)) was installed by me or under my supervision. (Attached additional sheets as necessary.)

(2) The landscaping for the identified landscape project has been installed in substantial conformance with the approved landscape design plan, and complies with the requirements of the City of Corona Municipal Code section 17.70.070 and the Landscape Design Guidelines for Commercial and Industrial Development for the efficient use of water in the landscape. The landscaping was installed as specified by the landscape design plan and the irrigation system was installed as designed, and an irrigation audit has been performed.

(3) The following is a list of identified installation deficiencies (Attach additional pages if necessary.): _____

(4) The information I have provided in this Certificate of Completion is true and correct and is hereby submitted in compliance with the Landscape Design Guidelines for Residential Development.

Print Name _____ Title _____ Date _____

Signature _____ License Number _____

Company _____ Address _____

Telephone _____ Fax _____ E-mail Address _____

For City use only.

Landscape Design Professional's Stamp
(If Appropriate)

<input type="checkbox"/> Project Approved <input type="checkbox"/> Project Not Approved

Name _____ Title _____

Signature _____ Date _____
Reasons for denial included in attached sheet(s).

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FIGURE 1 WATER BUDGET FORMULA AND CHARTS

INSTRUCTIONS FOR FILLING OUT WATER BUDGET FORMULA

1. To find MAWA

STEP 1: Calculate your total square footage of the landscape area and insert that number into Space A. (Round the number to the nearest hundred).

STEP 2: The Reference Evapotranspiration for Corona is 56.37. Insert 56.37 in Space B.

STEP 3: Multiple $A \times .62 \times B \times .8$, put the answer in Space C and divide by 748. This gives you your MAWA in gallons.

2. To find EAWU for each Hydrozone

STEP 1: Find your plant factor (CHART 2) for the hydrozone remembering to use the highest plant factor per hydrozone. If you have medium and a low in the same hydrozone, the factor is medium. Place that number in Space D.

STEP 2: Calculate your square footage for the hydrozone (Round to the nearest hundred) and put number in Space E. Next, insert the hydrozone irrigation efficiency number from (CHART 3) into Space F.

STEP 3: Multiple ET_o (from Chart 1) $\times D \times E \times 0.62$, then divide that number by $F \times 748$. This will give you the EAWU number for Space G.

STEP 4: Repeat steps 1-3 for each hydrozone.

STEP 5: Add all G's and put number into Space H.

STEP 6: Divide H by .85 and that will give you your Total EAWU (Space I). This is the irrigation system operating efficiency.

STEP 7: To find J, Subtract I (EAWU) from MAWA and that will give you the total water use for the project. The resulting number must be positive.

BE SURE TO RUN EAWU CALCULATION FOR EACH HYDROZONE WITHIN YOUR PROJECT.

FIGURE 2

The following blank work sheet may be modified as-needed for each project and shall be included On all Irrigation Plan submittals.

1 Maximum Annual Water Allocation (MAWA)	
INPUT the total square footage of landscape =	[] x .62
INPUT the Hist. ETo for the area =	[] x .8
	MAWA = [] gal / yr
	748
	MAWA = []
2 Estimated Annual Water Use (EAWU)	
Hydrozone # 1	INPUT Plant Factor = [] (Turf)
INPUT square footage of hydrozone =	[]
INPUT hydrozone irrigation efficiency =	[]
FAWU =	[] cu ft / yr
Hydrozone # 2	INPUT Plant Factor = [] (High)
INPUT square footage of hydrozone =	[]
INPUT hydrozone irrigation efficiency =	[]
EAWU =	[] cu ft / yr
Hydrozone # 3	INPUT Plant Factor = [] (Med)
INPUT square footage of hydrozone =	[]
INPUT hydrozone irrigation efficiency =	[]
EAWU =	[] cu ft / yr
Hydrozone # 4	INPUT Plant Factor = [] (Low)
INPUT square footage of hydrozone =	[]
INPUT hydrozone irrigation efficiency =	[]
EAWU =	[] cu ft / yr
Hydrozone # 5	INPUT Plant Factor = [] (Very Low)
INPUT square footage of hydrozone =	[]
INPUT hydrozone irrigation efficiency =	[]
EAWU =	[] cu ft / yr
	SubTotal EAWU = [] cu ft / yr
	Input Irrigation System Operation Factor 0.85
	Total EAWU =
	MAWA - EAWU = [] cu ft / yr
	(this number must be positive)