

EXHIBIT "A"

PROPOSED LANDSCAPE WATER EFFICIENCY CODE AMENDMENTS

Section 9.08.040.045 (Definitions) of Section 9.08.040 (Single-Family Residential Development Standards) of Chapter 9.08 of Title 9 of the Garden Grove Municipal Code is hereby amended and restated to read in its entirety as follows:

9.08.040.045 Landscaping–Definitions

"The following definitions are applicable to this chapter.

"Aggregate landscape areas" pertains to the areas undergoing development as one project or for production home neighborhoods or other situations where multiple parcels are undergoing development as one project, but will eventually be individually owned.

"Applied water" means the portion of water supplied by the irrigation system to the landscape.

"Backflow prevention device" means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from an irrigation system.

"Budget-based tiered-rate structure" means tiered or block rates for irrigation accounts charged by the retail water agency in which the block definition for each customer is derived from lot size or irrigated area and the evapotranspiration requirements of landscaping.

"Community Aesthetics Evaluation" means a process that is performed to ensure the aesthetic standards of the community and irrigation efficiency intent is maintained when a permit, plan check or design review is not required.

"Ecological restoration project" means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

"Estimated applied water use" or "EAWU" means the average annual total amount of water estimated to be necessary to keep plants in a healthy state, calculated as provided in the Guidelines. It is based on the reference evapotranspiration rate, the size of the landscape area, plant water use factors, and the relative irrigation efficiency of the irrigation system.

“Evapotranspiration adjustment factor” or “ETAF” of 0.55 for residential areas and 0.45 for non-residential areas, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape. The ETAF for new and existing (non-rehabilitated) Special Landscape Area shall not exceed 1.0. The ETAF for existing non-rehabilitated landscapes is 0.8.

“Evapotranspiration rate” means the quantity of water evaporated from adjacent soil surfaces and transpired by plants during a specific time.

“Guidelines” refers to the *Guidelines for Implementation of the Landscape Water Efficiency Provisions*, as adopted by the City Council, and as subsequently amended by resolution of the City Council, which describes procedures, calculations, and requirements for landscape projects subject to the landscape water efficiency provisions. The *Guidelines* are attached to Title 9 as Appendix 1 and may be amended from time to time by resolution of the City Council.

“Hardscapes” means any durable material or feature (pervious or non-pervious) installed in or around a landscaped area, such as pavements, pavers, stonework or walls. Pools and other water features are considered part of the landscaped area and not considered hardscapes for purposes of the landscape water efficiency provisions.

“Hydrozone” means a portion of the landscaped area having plants with similar water needs and typically irrigated by one valve/controller station. A hydrozone may be irrigated or non-irrigated. For example, a naturalized area planted with native vegetation that will not need supplemental irrigation once established is a non-irrigated hydrozone.

“Irrigation efficiency” means the measurement of the amount of water beneficially used, divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The irrigation efficiency for purposes of the landscape water efficiency provisions are 0.75 for overhead spray devices and 0.81 for drip systems.

“Landscaped area” means all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance and Estimated Applied Water Use Calculations. The landscaped area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks,

patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation).

“Landscape contractor” means a person licensed by the State of California to construct, maintain, repair, install, or subcontract the development of landscape systems.

“Landscape documentation package” means the documents required to be provided to the City for review and approval of landscape design projects, as described in the *Guidelines*.

“Landscape project” means total area of landscape in a project, as provided in the definition of “landscaped area,” meeting the requirements under Section 9.08.040.055, paragraphs A, B, and C of this chapter.

“Landscape water efficiency provisions” means the following sections and paragraphs of this chapter relating to landscape water efficiency: Sections 9.08.040.040; 9.08.040.045; 9.08.040.055; and 9.08.040.060 (introductory paragraph); Section 9.08.040.060, paragraphs B, P, Q, R, S, and T; and Section 9.08.040.080, paragraph C.

“Local agency” means a local water purveyor or city or county, including a charter city or charter county, that is authorized by the City to implement, administer, and/or enforce any of the landscape water efficiency provisions on behalf of the City. The local agency may be responsible for the enforcement or delegation of enforcement of the landscape water efficiency provisions, including, but not limited to, design review, plan check, issuance of permits, and inspection of a landscape project.

“Local water purveyor” means any entity, including a public agency, city, county, or private water company that provides retail water service.

“Maximum applied water allowance” or “MAWA” means the upper limit of annual applied water for the established landscaped area as specified in the *Guidelines*. The “MAWA” is based upon the area’s reference evapotranspiration, the ET adjustment factor, and the size of the landscaped area. The estimated applied water use shall not exceed the maximum applied water allowance. $MAWA = (ET_o) (0.62) [(ETAF \times LA) + ((1-ETAF) \times SLA)]$.

“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.

“New construction” means, for the purposes of this section, a new building with a landscape or other new landscape such as a park, playground, or greenbelt without an associated building.

“Non-pervious” means any surface or natural material that does not allow for the passage of water through the material and into the underlying soil.

“Overspray” means the irrigation water that is delivered beyond the target landscaped area.

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

“Permit” means an authorizing document issued by local agencies for new construction or rehabilitated landscape.

“Plant factor” or “plant water use factor” is a factor, when multiplied by ETo, that estimates the amount of water needed by plants. For purposes of the landscape water efficiency provisions, the plant factor range for very low water use plants is 0 to 0.1; the plant factor range for low water use plants is 0 to 0.3; the plant factor range for moderate water use plants is 0.4 to 0.6; and the plant factor range for high water use plants is 0.7 to 1.0. Plant factors cited in the landscape water efficiency provisions are derived from the publication “Water Use Classification of Landscape Species.” Plant factors may also be obtained from horticultural researchers from academic institutions or professional associations as approved by the California Department of Water Resources (DWR).

“Recycled water” or “reclaimed water” means treated or recycled waste water of a quality suitable for non-potable uses such as landscape irrigation and water features. This water is not intended for human consumption.

“Reference evapotranspiration” or “ETo” means a standard measurement of environmental parameters which affect the water use of plants. ETo is expressed in inches per day, month, or year as represented in the Guidelines, and is an estimate of the evapotranspiration of a large field of four- to seven-inch tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis for determining the maximum applied water allowances.

“Rehabilitated landscape” means any re-landscaping project that meets the applicability criteria of Section 9.08.040.055.A, where the modified landscape area is greater than 2,500 square feet.

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

“Smart automatic irrigation controller” means a timing device with non-volatile memory used to remotely control valves that operate an irrigation system and which is able to self-adjust and schedule irrigation events using either evapotranspiration (weather-based) or soil moisture data.

“Special landscape area” means an area of the landscape dedicated solely to edible plants such as orchards and vegetable gardens, areas irrigated with recycled water, water features using recycled water, and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.

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

“Valve” means a device used to control the flow of water in an irrigation system.

“Water Conservation Program” means the provisions set forth in Chapter 14.40 of the Garden Grove Municipal Code, as it may be amended from time to time, and implementing regulations promulgated by the City.

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

Section 9.08.040.055 (Landscaping-Water Efficiency) of Section 9.08.040 (Single-Family Residential Development Standards) of Chapter 9.08 of Title

9 of the Garden Grove Municipal Code is hereby amended and restated to read in its entirety as follows:

9.08.040.055 Landscaping—Water Efficiency

A. Beginning February 1, 2016, and consistent with Executive Order No. B-29-15, the landscape water efficiency provisions shall apply to the following landscape projects:

1. New landscape projects with an aggregate landscaped area equal to or greater than 500 square feet requiring a building or landscape permit, plan check, or site plan or other discretionary review;

2. Rehabilitated landscape projects with an aggregate landscaped area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check or site plan or other discretionary review;

3. New or rehabilitated landscape projects with an aggregate landscaped area of 2,500 square feet or less may comply with the performance requirements of the landscape water efficiency provisions or conform to the prescriptive measures contained in Appendix A of the Guidelines.

4. For new or rehabilitated landscape projects using treated or untreated graywater or rainwater capture on site, any lot or parcel within the project that has less than 2,500 square feet of landscape area and meets the lot or parcel's landscape water requirement (Estimated Total Water Use) entirely with the treated or untreated graywater or though stored rainwater capture on site is subject only to Appendix A of the Guidelines.

5. At cemeteries, Sections 2.9, 2.10, and Appendix C of the Guidelines shall apply to new landscape installations and Sections 2.9, 2.10, and 3 of the Guidelines shall apply to landscape rehabilitation projects.

B. The irrigation efficiency requirements set forth in subsection T.1.c.ii of Section 9.08.040.060 (Landscaping Requirements) shall apply to:

1. All landscaped areas, whether installed prior to or after January 1, 2010; and

2. All landscaped areas installed after February 1, 2016 to which Section 9.08.040.055.A is applicable.

C. The landscape water efficiency provisions do not apply to the following:

1. Registered local, state, or federal historical sites;
2. Ecological restoration projects that do not require a permanent irrigation system; or
3. Mined-land reclamation projects that do not require a permanent irrigation system; or
4. Plant collections, as part of botanical gardens and arboretums open to the public.

D. The following submittals shall be required for all landscape projects subject to the landscape water efficiency provisions:

1. Prior to installation, a landscape documentation package shall be submitted to the City for review and approval of all landscape projects subject to the landscape water efficiency provisions. Any landscape documentation package submitted to the City shall comply with the provisions of the Guidelines.
2. The landscape documentation package shall include a certification by a professional, appropriately licensed in the state of California, stating that the landscape design and water use calculations have been prepared by, or under, the supervision of the licensed professional and are certified to be in compliance with the provisions of this chapter and the Guidelines.
 - a. Landscape and irrigation plans shall be submitted to the City for review and approval with appropriate water use calculations. Water use calculations shall be consistent with calculations contained in the Guidelines and shall be provided to the Water Department, as appropriate, under procedures determined by the City.
 - b. Verification of compliance of the landscape installation with the approved plans shall be obtained through a certificate of completion in conjunction with a certificate of use and occupancy or permit final process, as provided in the Guidelines.

Subsections P through T of Section 9.08.040.060 (Landscaping Requirements) of Section 9.08.040 (Single-Family Residential Development Standards) of Chapter 9.08 of Title 9 of the Garden Grove Municipal Code are hereby amended and restated in their entirety to read as follows:

P. Landscaping and Irrigation Plans Required. Landscape and irrigation plans shall be required for all projects requiring approval by the hearing body and to which the landscape water efficiency provisions apply. Such plans shall be submitted for discretionary approval to the hearing body. Said plans shall be prepared in accordance with requirements and standards established pursuant to this Chapter and the Guidelines (specifically refer to sections on landscape design plan and irrigation design plan).

Q. In addition to the above, the following are requirements that shall apply to the landscape design plan and are more fully explained in the Guidelines (Appendix 1, Title 9):

1. Any plants may be used in a landscaped area, provided the estimated applied water use in the landscaped area does not exceed the maximum applied water allowance, and that the plants meet the specifications set forth in this section. The planting of trees is encouraged wherever it is consistent with the other provisions of this section. To encourage the efficient use of water, the following are highly recommended for inclusion in the landscape design plan: protection, preservation, and selection of non-invasive water-conserving plant, tree, and turf species; selection of plants based on local climate suitability, disease and pest resistance; selection of trees based on applicable City ordinances and guidelines and on size at maturity as appropriate for the planting area; selection of plants from local and regional landscape program plant lists; and selection of plants from local fuel modification plan guidelines.

2. Except as otherwise permitted in accordance with the Guidelines, plants having similar water use shall be grouped together in distinct hydrozones.

3. Plants shall be selected appropriately based upon their adaptability to the climatic, geologic and topographical conditions of the project site. Methods to achieve water efficiency shall include one or more of the following:

- a. Use the Sunset Western Climate Zone System, or equivalent generally accepted models, which takes into account temperature, humidity, elevation, terrain, latitude, and varying degrees of continental and marine influence on local climate;

- b. Recognize the horticultural attributes of plants (i.e., mature plant size, invasive surface roots) to minimize damage to property or infrastructure (e.g., buildings, sidewalks, and power lines); allow for adequate soil volume for healthy root growth; and

c. Consider the solar orientation of the site and how plant placement will maximize summer shade and winter solar gain.

R. Irrigation Requirements.

1. All landscaped areas shall be provided with an approved irrigation system that meets the requirements of this Chapter and the Guidelines. An irrigation design plan meeting the design criteria in the Guidelines shall be submitted as part of the landscape documentation package for those projects subject to Section 9.08.040.055.A.

2. Irrigation shall be performed in conformance with the City's Water Conservation Program.

S. System Design. For the efficient use of water, an irrigation system shall meet all the requirements listed in the Irrigation Design Plan provisions of the Guidelines and in the manufacturer's recommendations. The irrigation system and its related components shall be planned and designed to allow for proper installation, management, and maintenance. An irrigation design plan meeting the design criteria of the Guidelines shall be submitted as part of the landscape documentation package. Smart automatic irrigation controllers shall be required for irrigation scheduling in all irrigation systems, recommending U.S. EPA WaterSense labeled devices as applicable.

T. In addition to the above, the following are requirements that shall apply to the landscape design plan.

1. Irrigation Design Criteria.

a. Runoff and Overspray. Soil types and infiltration rate shall be considered when designing irrigation systems. All irrigation systems shall be designed to avoid runoff, low-head drainage, overspray or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes (walks, etc.), roadways or structures.

b. Special attention shall be given to avoid runoff on slopes and to avoid overspray on areas less than ten (10) feet in width in any direction. Such areas shall be irrigated with subsurface irrigation or other means that produce no runoff or overspray.

c. Irrigation Efficiency.

i. For new or rehabilitated landscape projects subject to Section 9.08.040.055.A, the estimated applied water use allowed for the landscaped areas shall not exceed the MAWA calculated using an ET adjustment factor of 0.55 for residential areas and 0.45 for non-residential areas, except for special landscaped areas where the MAWA is calculated using an ET adjustment factor of 1.0; or the design of the landscaped areas shall otherwise be shown to be equivalently water-efficient in a manner acceptable to the City, as provided in the Guidelines.

ii. Irrigation of all landscaped areas shall be conducted in a manner conforming to the rules and requirements, and shall be subject to penalties and incentives, for water conservation and water waste prevention as determined and implemented by the City.

iii. The project applicant shall understand and implement the requirements of the City's Water Conservation Program.

d. Equipment. The *Guidelines* provide design criteria for irrigation equipment in the "Irrigation Design Plan" provisions.

2. Recycled Water.

a. At such time as recycled water is available, the installation of recycled water irrigation systems (dual distribution systems) shall be required to allow for the current and future use of recycled water.

b. Irrigation systems shall make use of recycled water unless a written exemption has been granted by the local water agency, stating that recycled water meeting all health standards is not available and will not be available in the foreseeable future.

c. The recycled water irrigation systems shall be designed and operated in accordance with all local and State codes.

3. Irrigation Design Plan Specifications. Irrigation systems shall be designed to be consistent with hydrozones. Hydrozone areas shall be designated by number, letter, or other designation on both the Irrigation Design Plan and the Landscape Design Plan. The irrigation design plan shall be separate from, but use the same format as, the landscape design plan. The scale shall be the same as that used for the landscape design plan. The irrigation design plan shall fully meet those requirements found in the Guidelines, but at a minimum, shall contain:

a. Location and size of separate water meters for the landscape;

b. Location, type and size of all components of the irrigation system, including controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers and backflow prevention devices;

c. Static water pressure at the point of connection to the public water supply;

d. Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (psi) for each station;

e. Irrigation schedule parameters necessary to program smart timers specified in the landscape design;

f. The following statement: "I have complied with the Landscape Water Efficiency provisions and the design criteria in the Guidelines and applied them accordingly for the efficient use of water in the irrigation design plan;" and

g. The signature of a California-licensed landscape professional.

4. Maximum Applied Water Allowance. A project's maximum applied water allowance shall be calculated in a manner acceptable to the City, as provided in the Guidelines.

5. Irrigation Schedules. For the efficient use of water, all irrigation schedules shall be developed, managed, and evaluated to utilize the minimum amount of water required to maintain plant health. Irrigation schedules shall meet the following criteria:

a. Irrigation scheduling shall be regulated by smart automatic irrigation controllers.

b. Overhead irrigation shall be scheduled in accordance with the City's Water Conservation Program. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.

6. Certificate of Completion.

a. Landscape project installation shall not proceed until the landscape documentation package has been approved by the City and any ministerial permits required are issued.

b. The project applicant shall notify the City at the beginning of the installation work and at intervals, as necessary, for the duration of the landscape project work to schedule all required inspections.

c. Certification of completion of the landscape project shall be obtained through a certificate of use and occupancy or a permit final. The requirements for the final inspection and permit closure include submittal of:

i. A landscape installation certificate of completion in the form included as Appendix E in the Guidelines, which shall include: (1) certification by a landscape professional that the landscape project has been installed per the approved landscape documentation package; and (2) the following statement: "The landscaping has been installed in substantial conformance with the design plans, and complies with the City of Garden Grove Landscape Water Efficiency Provisions for the efficient use water in the landscape." Where there have been significant changes (as determined by the City) made in the field during construction, these "as-built" or record drawings shall be included with the certificate. A diagram of the irrigation plan showing hydrozones shall be kept with the irrigation controller for subsequent management purposes.

ii. Documentation of the irrigation scheduling parameters used to set the controller(s).

iii. An irrigation audit report from a local agency irrigation auditor or third party certified landscape irrigation auditor, documentation of enrollment in regional or local water purveyors' water conservation programs, and/or documentation that the MAWA and EAWU information for the landscape project has been submitted to the City or other local water purveyor, may be required at the option of the City in accordance with the Guidelines. Landscape audits shall not be conducted by the persons who designed or installed the landscape.

Section 9.12.040.075 (Definitions) of Section 9.12.040 (Multi-Family Residential Development Standards) of Chapter 9.12 of Title 9 of the Garden Grove Municipal Code is hereby amended and restated to read in its entirety as follows:

9.12.040.075 Landscaping–Definitions

“The following definitions are applicable to this chapter.

“Aggregate landscape areas” pertains to the areas undergoing development as one project or for production home neighborhoods or other situations where multiple parcels are undergoing development as one project, but will eventually be individually owned.

“Applied water” means the portion of water supplied by the irrigation system to the landscape.

“Backflow prevention device” means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from an irrigation system.

“Budget-based tiered-rate structure” means tiered or block rates for irrigation accounts charged by the retail water agency in which the block definition for each customer is derived from lot size or irrigated area and the evapotranspiration requirements of landscaping.

“Community Aesthetics Evaluation” means a process that is performed to ensure the aesthetic standards of the community and irrigation efficiency intent is maintained when a permit, plan check or design review is not required.

“Ecological restoration project” means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

“Estimated applied water use” or “EAWU” means the average annual total amount of water estimated to be necessary to keep plants in a healthy state, calculated as provided in the Guidelines. It is based on the reference evapotranspiration rate, the size of the landscape area, plant water use factors, and the relative irrigation efficiency of the irrigation system.

“Evapotranspiration adjustment factor” or “ETAF” of 0.55 for residential areas and 0.45 for non-residential areas, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape. The ETAF for

new and existing (non-rehabilitated) Special Landscape Area shall not exceed 1.0. The ETAF for existing non-rehabilitated landscapes is 0.8.

“Evapotranspiration rate” means the quantity of water evaporated from adjacent soil surfaces and transpired by plants during a specific time.

“Guidelines” refers to the *Guidelines for Implementation of the Landscape Water Efficiency Provisions*, as adopted by the City Council, and as subsequently amended by resolution of the City Council, which describes procedures, calculations, and requirements for landscape projects subject to the landscape water efficiency provisions. The *Guidelines* are attached to Title 9 as Appendix 1 and may be amended from time to time by resolution of the City Council.

“Hardscapes” means any durable material or feature (pervious or non-pervious) installed in or around a landscaped area, such as pavements, pavers, stonework or walls. Pools and other water features are considered part of the landscaped area and not considered hardscapes for purposes of the landscape water efficiency provisions.

“Hydrozone” means a portion of the landscaped area having plants with similar water needs and typically irrigated by one valve/controller station. A hydrozone may be irrigated or non-irrigated. For example, a naturalized area planted with native vegetation that will not need supplemental irrigation once established is a non-irrigated hydrozone.

“Irrigation efficiency” means the measurement of the amount of water beneficially used, divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The irrigation efficiency for purposes of the landscape water efficiency provisions are 0.75 for overhead spray devices and 0.81 for drip systems.

“Landscaped area” means all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance and Estimated Applied Water Use Calculations. The landscaped area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation).

“Landscape contractor” means a person licensed by the State of California to construct, maintain, repair, install, or subcontract the development of landscape systems.

“Landscape documentation package” means the documents required to be provided to the City for review and approval of landscape design projects, as described in the *Guidelines*.

“Landscape project” means total area of landscape in a project, as provided in the definition of “landscaped area,” meeting the requirements under Section 9.12.040.085, paragraphs A, B, and C of this chapter.

“Landscape water efficiency provisions” means the following sections and paragraphs of this chapter relating to landscape water efficiency: Sections 9.12.040.070; 9.12.040.075; 9.12.040.085; 9.12.040.090 (introductory paragraph); 9.12.040.090 paragraphs B, P, Q, R, S and T; and 9.12.040.110 paragraph C.

“Local agency” means a local water purveyor or city or county, including a charter city or charter county, that is authorized by the City to implement, administer, and/or enforce any of the landscape water efficiency provisions on behalf of the City. The local agency may be responsible for the enforcement or delegation of enforcement of the landscape water efficiency provisions, including, but not limited to, design review, plan check, issuance of permits, and inspection of a landscape project.

“Local water purveyor” means any entity, including a public agency, city, county, or private water company that provides retail water service.

“Maximum applied water allowance” or “MAWA” means the upper limit of annual applied water for the established landscaped area as specified in the *Guidelines*. The “MAWA” is based upon the area’s reference evapotranspiration, the ET adjustment factor, and the size of the landscaped area. The estimated applied water use shall not exceed the maximum applied water allowance. $MAWA = (ET_o) (0.62) [(ETAF \times LA) + ((1-ETAF) \times SLA)]$.

“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.

“New construction” means, for the purposes of this section, a new building with a landscape or other new landscape such as a park, playground, or greenbelt without an associated building.

“Non-pervious” means any surface or natural material that does not allow for the passage of water through the material and into the underlying soil.

“Overspray” means the irrigation water that is delivered beyond the target landscaped area.

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

“Permit” means an authorizing document issued by local agencies for new construction or rehabilitated landscape.

“Plant factor” or “plant water use factor” is a factor, when multiplied by ETo, that estimates the amount of water needed by plants. For purposes of the landscape water efficiency provisions, the plant factor range for very low water use plants is 0 to 0.1; the plant factor range for low water use plants is 0 to 0.3; the plant factor range for moderate water use plants is 0.4 to 0.6; and the plant factor range for high water use plants is 0.7 to 1.0. Plant factors cited in the landscape water efficiency provisions are derived from the publication “Water Use Classification of Landscape Species.” Plant factors may also be obtained from horticultural researchers from academic institutions or professional associations as approved by the California Department of Water Resources (DWR).

“Recycled water” or “reclaimed water” means treated or recycled waste water of a quality suitable for non-potable uses such as landscape irrigation and water features. This water is not intended for human consumption.

“Reference evapotranspiration” or “ETo” means a standard measurement of environmental parameters which affect the water use of plants. ETo is expressed in inches per day, month, or year as represented in the Guidelines, and is an estimate of the evapotranspiration of a large field of four- to seven-inch tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis for determining the maximum applied water allowances.

“Rehabilitated landscape” means any re-landscaping project that meets the applicability criteria of Section 9.08.040.055.A, where the modified landscape area is greater than 2,500 square feet.

“Runoff” means water that is not absorbed by the soil or landscape to which it is applied and flows from the landscaped area. For example, runoff may result from water that is applied

at too great a rate (application rate exceeds infiltration rate) or when there is a slope.

“Smart automatic irrigation controller” means a timing device with non-volatile memory used to remotely control valves that operate an irrigation system and which is able to self-adjust and schedule irrigation events using either evapotranspiration (weather-based) or soil moisture data.

“Special landscape area” means an area of the landscape dedicated solely to edible plants such as orchards and vegetable gardens, areas irrigated with recycled water, water features using recycled water, and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.

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

“Valve” means a device used to control the flow of water in an irrigation system.

“Water Conservation Program” means the provisions set forth in Chapter 14.40 of the Garden Grove Municipal Code, as it may be amended from time to time, and implementing regulations promulgated by the City.

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

Section 9.12.040.085 (Landscaping Water Efficiency) of Section 9.12.040 (Multi-Family Residential Development Standards) of Chapter 9.12 of Title 9 of the Garden Grove Municipal Code is hereby amended and restated to read in its entirety as follows:

9.12.040.085 Landscaping Water Efficiency

A. Beginning February 1, 2016, and consistent with Executive Order No. B-29-15, the landscape water efficiency provisions shall apply to the following landscape projects:

1. New landscape projects with an aggregate landscaped area equal to or greater than 500 square feet requiring a building or landscape permit, plan check, or site plan or other discretionary review;
2. Rehabilitated landscape projects with an aggregate landscaped area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check, or site plan or other discretionary;
3. New or rehabilitated landscape projects with an aggregate landscaped area of 2,500 square feet or less may comply with the performance requirements of the landscape water efficiency provisions or conform to the prescriptive measures contained in Appendix A of the Guidelines.
4. For new or rehabilitated landscape projects using treated or untreated graywater or rainwater capture on site, any lot or parcel within the project that has less than 2,500 square feet of landscape area and meets the lot or parcel's landscape water requirement (Estimated Total Water Use) entirely with the treated or untreated graywater or though stored rainwater capture on site is subject only to Appendix A of the Guidelines.
5. At cemeteries, Sections 2.9, 2.10, and Appendix C of the Guidelines shall apply to new landscape installations and Sections 2.9, 2.10, and 3 of the Guidelines shall apply to landscape rehabilitation projects.

B. The irrigation efficiency requirements set forth in subsection T.1.c.ii of Section 9.12.040.090 (Landscaping Requirements) shall apply to:

1. All landscaped areas, whether installed prior to or after January 1, 2010; and
2. All landscaped areas installed after February 1, 2016 to which Section 9.12.040.085.A is applicable.

C. The landscape water efficiency provisions do not apply to the following:

1. Registered local, state, or federal historical sites;
2. Ecological restoration projects that do not require a permanent irrigation system; or
3. Mined-land reclamation projects that do not require a permanent irrigation system; or
4. Plant collections, as part of botanical gardens and arboretums open to the public.

D. The following submittals shall be required for all landscape projects subject to the landscape water efficiency provisions:

1. Prior to installation, a landscape documentation package shall be submitted to the City for review and approval of all landscape projects subject to the landscape water efficiency provisions. Any landscape documentation package submitted to the City shall comply with the provisions of the Guidelines.
2. The landscape documentation package shall include a certification by a professional, appropriately licensed in the state of California, stating that the landscape design and water use calculations have been prepared by, or under, the supervision of the licensed professional and are certified to be in compliance with the provisions of this chapter and the Guidelines.
 - a. Landscape and irrigation plans shall be submitted to the City for review and approval with appropriate water use calculations. Water use calculations shall be consistent with calculations contained in the Guidelines and shall be provided to the Water Department, as appropriate, under procedures determined by the City.
 - b. Verification of compliance of the landscape installation with the approved plans shall be obtained through a certificate of completion in conjunction with a certificate of use and occupancy or permit final process, as provided in the Guidelines.

Subsections P through T of Section 9.12.040.090 (Landscaping Requirements) of Section 9.12.040 (Multi-Family Residential Development Standards) Chapter 9.12 of Title 9 of the Garden Grove Municipal Code are hereby amended and restated in their entirety to read as follows:

P. Landscaping and Irrigation Plans Required. Landscape and irrigation plans shall be required for all projects requiring approval by the hearing body and to which the landscape water efficiency provisions apply. Such plans shall be submitted for discretionary approval to the hearing body. Said plans shall be prepared in accordance with requirements and standards established pursuant to this Chapter and the Guidelines (specifically refer to sections on landscape design plan and irrigation design plan).

Q. In addition to the above, the following are requirements that shall apply to the landscape design plan and are more fully explained in the Guidelines (Appendix 1, Title 9):

1. Any plants may be used in a landscaped area, provided the estimated applied water use in the landscaped area does not exceed the maximum applied water allowance, and that the plants meet the specifications set forth in this section. The planting of trees is encouraged wherever it is consistent with the other provisions of this section. To encourage the efficient use of water, the following are highly recommended for inclusion in the landscape design plan: protection, preservation, and selection of non-invasive water-conserving plant, tree, and turf species; selection of plants based on local climate suitability, disease and pest resistance; selection of trees based on applicable City ordinances and guidelines and on size at maturity as appropriate for the planting area; selection of plants from local and regional landscape program plant lists; and selection of plants from local fuel modification plan guidelines.

2. Except as otherwise permitted in accordance with the Guidelines, plants having similar water use shall be grouped together in distinct hydrozones.

3. Plants shall be selected appropriately based upon their adaptability to the climatic, geologic and topographical conditions of the project site. Methods to achieve water efficiency shall include one or more of the following:

a. Use the Sunset Western Climate Zone System, or equivalent generally accepted models, which takes into account temperature, humidity, elevation, terrain, latitude, and varying degrees of continental and marine influence on local climate;

b. Recognize the horticultural attributes of plants (i.e., mature plant size, invasive surface roots) to minimize damage to property or infrastructure (e.g., buildings, sidewalks, and power lines); allow for adequate soil volume for healthy root growth; and

c. Consider the solar orientation of the site and how plant placement will maximize summer shade and winter solar gain.

R. Irrigation Requirements.

1. All landscaped areas shall be provided with an approved irrigation system that meets the requirements of this Chapter and the Guidelines. An irrigation design plan meeting the design criteria in the Guidelines shall be submitted as part of the landscape documentation package for those projects subject to Section 9.12.040.085.A.

2. Irrigation shall be performed in conformance with the City's Water Conservation Program.

S. System Design. For the efficient use of water, an irrigation system shall meet all the requirements listed in the Irrigation Design Plan provisions of the Guidelines and in the manufacturer's recommendations. The irrigation system and its related components shall be planned and designed to allow for proper installation, management, and maintenance. An irrigation design plan meeting the design criteria of the Guidelines shall be submitted as part of the landscape documentation package. Smart automatic irrigation controllers shall be required for irrigation scheduling in all irrigation systems, recommending U.S. EPA WaterSense labeled devices as applicable.

T. In addition to the above, the following are requirements that shall apply to the landscape design plan.

1. Irrigation Design Criteria.

a. Runoff and Overspray. Soil types and infiltration rate shall be considered when designing irrigation systems. All irrigation systems shall be designed to avoid runoff, low-head drainage, overspray or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes (walks, etc.), roadways or structures.

b. Special attention shall be given to avoid runoff on slopes and to avoid overspray on areas less than ten (10) feet in

width in any direction. Such areas shall be irrigated with subsurface irrigation or other means that produce no runoff or overspray.

c. Irrigation Efficiency.

i. For new or rehabilitated landscape projects subject to Section 9.12.040.085.A, the estimated applied water use allowed for the landscaped areas shall not exceed the MAWA calculated using an ET adjustment factor of 0.55 for residential areas and 0.45 for non-residential areas, except for special landscaped areas where the MAWA is calculated using an ET adjustment factor of 1.0; or the design of the landscaped areas shall otherwise be shown to be equivalently water-efficient in a manner acceptable to the City, as provided in the Guidelines.

ii. Irrigation of all landscaped areas shall be conducted in a manner conforming to the rules and requirements, and shall be subject to penalties and incentives, for water conservation and water waste prevention as determined and implemented by the City.

iii. The project applicant shall understand and implement the requirements of the City's Water Conservation Program.

d. Equipment. The Guidelines provide design criteria for irrigation equipment in the "Irrigation Design Plan" provisions.

2. Recycled Water.

a. At such time as recycled water is available, the installation of recycled water irrigation systems (dual distribution systems) shall be required to allow for the current and future use of recycled water.

b. Irrigation systems shall make use of recycled water unless a written exemption has been granted by the local water agency, stating that recycled water meeting all health standards is not available and will not be available in the foreseeable future.

c. The recycled water irrigation systems shall be designed and operated in accordance with all local and State codes.

3. Irrigation Design Plan Specifications. Irrigation systems shall be designed to be consistent with hydrozones. Hydrozone areas shall be designated by number, letter, or other designation on both the

Irrigation Design Plan and the Landscape Design Plan. The irrigation design plan shall be separate from, but use the same format as, the landscape design plan. The scale shall be the same as that used for the landscape design plan. The irrigation design plan shall fully meet those requirements found in the Guidelines, but at a minimum, shall contain:

a. Location and size of separate water meters for the landscape;

b. Location, type and size of all components of the irrigation system, including controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers and backflow prevention devices;

c. Static water pressure at the point of connection to the public water supply;

d. Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (psi) for each station;

e. Irrigation schedule parameters necessary to program smart timers specified in the landscape design;

f. The following statement: "I have complied with the Landscape Water Efficiency provisions and the design criteria in the Guidelines and applied them accordingly for the efficient use of water in the irrigation design plan;" and

g. The signature of a California-licensed landscape professional.

4. Maximum Applied Water Allowance. A project's maximum applied water allowance shall be calculated in a manner acceptable to the City, as provided in the Guidelines.

5. Irrigation Schedules. For the efficient use of water, all irrigation schedules shall be developed, managed, and evaluated to utilize the minimum amount of water required to maintain plant health. Irrigation schedules shall meet the following criteria:

a. Irrigation scheduling shall be regulated by smart automatic irrigation controllers.

b. Overhead irrigation shall be scheduled in accordance with the City's Water Conservation Program. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.

6. Certificate of Completion.

a. Landscape project installation shall not proceed until the landscape documentation package has been approved by the City and any ministerial permits required are issued.

b. The project applicant shall notify the City at the beginning of the installation work and at intervals, as necessary, for the duration of the landscape project work to schedule all required inspections.

c. Certification of completion of the landscape project shall be obtained through a certificate of use and occupancy or a permit final. The requirements for the final inspection and permit closure include submittal of:

i. A landscape installation certificate of completion in the form included as Appendix E in the Guidelines, which shall include: (1) certification by a landscape professional that the landscape project has been installed per the approved landscape documentation package; and (2) the following statement: "The landscaping has been installed in substantial conformance with the design plans, and complies with the City of Garden Grove Landscape Water Efficiency Provisions for the efficient use water in the landscape." Where there have been significant changes (as determined by the City) made in the field during construction, these "as-built" or record drawings shall be included with the certificate. A diagram of the irrigation plan showing hydrozones shall be kept with the irrigation controller for subsequent management purposes.

ii. Documentation of the irrigation scheduling parameters used to set the controller(s).

iii. An irrigation audit report from a local agency irrigation auditor or third party certified landscape irrigation auditor, documentation of enrollment in regional or local water purveyors' water conservation programs, and/or documentation that the MAWA and EAWU information for the landscape project has been submitted to the City or other local water purveyor, may be required at the option of the City in accordance with the Guidelines. Landscape audits shall not be conducted by the persons who designed or installed the landscape.

Section 9.16.040.055 (Definitions) of Section 9.16.040 (Commercial/Office, Industrial Development Standards) of Chapter 9.16 of Title 9 of the Garden Grove Municipal Code is hereby amended and restated to read in its entirety as follows:

9.16.040.055 Landscaping–Definitions

“The following definitions are applicable to this chapter.

“Aggregate landscape areas” pertains to the areas undergoing development as one project or for production home neighborhoods or other situations where multiple parcels are undergoing development as one project, but will eventually be individually owned.

“Applied water” means the portion of water supplied by the irrigation system to the landscape.

“Backflow prevention device” means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from an irrigation system.

“Budget-based tiered-rate structure” means tiered or block rates for irrigation accounts charged by the retail water agency in which the block definition for each customer is derived from lot size or irrigated area and the evapotranspiration requirements of landscaping.

“Community Aesthetics Evaluation” means a process that is performed to ensure the aesthetic standards of the community and irrigation efficiency intent is maintained when a permit, plan check or design review is not required.

“Ecological restoration project” means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

“Estimated applied water use” or “EAWU” means the average annual total amount of water estimated to be necessary to keep plants in a healthy state, calculated as provided in the Guidelines. It is based on the reference evapotranspiration rate, the size of the landscape area, plant water use factors, and the relative irrigation efficiency of the irrigation system.

“Evapotranspiration adjustment factor” or “ETAF” of 0.55 for residential areas and 0.45 for non-residential areas, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape. The ETAF for

new and existing (non-rehabilitated) Special Landscape Area shall not exceed 1.0. The ETAF for existing non-rehabilitated landscapes is 0.8.

“Evapotranspiration rate” means the quantity of water evaporated from adjacent soil surfaces and transpired by plants during a specific time.

“Guidelines” refers to the *Guidelines for Implementation of the Landscape Water Efficiency Provisions*, as adopted by the City Council, and as subsequently amended by resolution of the City Council, which describes procedures, calculations, and requirements for landscape projects subject to the landscape water efficiency provisions. The *Guidelines* are attached to Title 9 as Appendix 1 and may be amended from time to time by resolution of the City Council.

“Hardscapes” means any durable material or feature (pervious or non-pervious) installed in or around a landscaped area, such as pavements, pavers, stonework or walls. Pools and other water features are considered part of the landscaped area and not considered hardscapes for purposes of the landscape water efficiency provisions.

“Hydrozone” means a portion of the landscaped area having plants with similar water needs and typically irrigated by one valve/controller station. A hydrozone may be irrigated or non-irrigated. For example, a naturalized area planted with native vegetation that will not need supplemental irrigation once established is a non-irrigated hydrozone.

“Irrigation efficiency” means the measurement of the amount of water beneficially used, divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The irrigation efficiency for purposes of the landscape water efficiency provisions are 0.75 for overhead spray devices and 0.81 for drip systems.

“Landscaped area” means all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance and Estimated Applied Water Use Calculations. The landscaped area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation).

“Landscape contractor” means a person licensed by the State of California to construct, maintain, repair, install, or subcontract the development of landscape systems.

“Landscape documentation package” means the documents required to be provided to the City for review and approval of landscape design projects, as described in the *Guidelines*.

“Landscape project” means total area of landscape in a project, as provided in the definition of “landscaped area,” meeting the requirements under Section 9.16.040.065, paragraphs A, B, and C of this chapter.

“Landscape water efficiency provisions” means the following sections and paragraphs of this chapter relating to landscape water efficiency: Sections 9.16.040.050; 9.16.040.055; 9.16.040.065; 9.16.040.070 (introductory paragraph); 9.16.040.070 paragraphs P–T; and 9.16.040.090 paragraph C.

“Local agency” means a local water purveyor or city or county, including a charter city or charter county, that is authorized by the City to implement, administer, and/or enforce any of the landscape water efficiency provisions on behalf of the City. The local agency may be responsible for the enforcement or delegation of enforcement of the landscape water efficiency provisions, including, but not limited to, design review, plan check, issuance of permits, and inspection of a landscape project.

“Local water purveyor” means any entity, including a public agency, city, county, or private water company that provides retail water service.

“Maximum applied water allowance” or “MAWA” means the upper limit of annual applied water for the established landscaped area as specified in the *Guidelines*. The “MAWA” is based upon the area’s reference evapotranspiration, the ET adjustment factor, and the size of the landscaped area. The estimated applied water use shall not exceed the maximum applied water allowance. $MAWA = (ET_o) (0.62) [(ETAF \times LA) + ((1-ETAF) \times SLA)]$.

“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.

“New construction” means, for the purposes of this section, a new building with a landscape or other new landscape such as a park, playground, or greenbelt without an associated building.

“Non-pervious” means any surface or natural material that does not allow for the passage of water through the material and into the underlying soil.

“Overspray” means the irrigation water that is delivered beyond the target landscaped area.

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

“Permit” means an authorizing document issued by local agencies for new construction or rehabilitated landscape.

“Plant factor” or “plant water use factor” is a factor, when multiplied by ETo, that estimates the amount of water needed by plants. For purposes of the landscape water efficiency provisions, the plant factor range for very low water use plants is 0 to 0.1; the plant factor range for low water use plants is 0 to 0.3; the plant factor range for moderate water use plants is 0.4 to 0.6; and the plant factor range for high water use plants is 0.7 to 1.0. Plant factors cited in the landscape water efficiency provisions are derived from the publication “Water Use Classification of Landscape Species.” Plant factors may also be obtained from horticultural researchers from academic institutions or professional associations as approved by the California Department of Water Resources (DWR).

“Recycled water” or “reclaimed water” means treated or recycled waste water of a quality suitable for non-potable uses such as landscape irrigation and water features. This water is not intended for human consumption.

“Reference evapotranspiration” or “ETo” means a standard measurement of environmental parameters which affect the water use of plants. ETo is expressed in inches per day, month, or year as represented in the Guidelines, and is an estimate of the evapotranspiration of a large field of four- to seven-inch tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis for determining the maximum applied water allowances.

“Rehabilitated landscape” means any re-landscaping project that meets the applicability criteria of Section 9.08.040.055.A, where the modified landscape area is greater than 2,500 square feet.

“Runoff” means water that is not absorbed by the soil or landscape to which it is applied and flows from the landscaped area. For example, runoff may result from water that is applied

at too great a rate (application rate exceeds infiltration rate) or when there is a slope.

“Smart automatic irrigation controller” means a timing device with non-volatile memory used to remotely control valves that operate an irrigation system and which is able to self-adjust and schedule irrigation events using either evapotranspiration (weather-based) or soil moisture data.

“Special landscape area” means an area of the landscape dedicated solely to edible plants such as orchards and vegetable gardens, areas irrigated with recycled water, water features using recycled water, and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.

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

“Valve” means a device used to control the flow of water in an irrigation system.

“Water Conservation Program” means the provisions set forth in Chapter 14.40 of the Garden Grove Municipal Code, as it may be amended from time to time, and implementing regulations promulgated by the City.

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

Section 9.16.040.065 (Landscaping-Water Efficiency) of Section 9.16.040 (Commercial/Office, Industrial Development Standards) of Chapter 9.16 of Title 9 of the Garden Grove Municipal Code is hereby amended and restated to read in its entirety as follows:

9.16.040.065 Landscaping Water Efficiency

A. Beginning February 1, 2016, and consistent with Executive Order No. B-29-15, the landscape water efficiency provisions shall apply to the following landscape projects:

1. New landscape projects with an aggregate landscaped area equal to or greater than 500 square feet requiring a building or landscape permit, plan check, or site plan or other discretionary review;
2. Rehabilitated landscape projects with an aggregate landscaped area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check, or site plan or other discretionary;
3. New or rehabilitated landscape projects with an aggregate landscaped area of 2,500 square feet or less may comply with the performance requirements of the landscape water efficiency provisions or conform to the prescriptive measures contained in Appendix A of the Guidelines.
4. For new or rehabilitated landscape projects using treated or untreated graywater or rainwater capture on site, any lot or parcel within the project that has less than 2,500 square feet of landscape area and meets the lot or parcel's landscape water requirement (Estimated Total Water Use) entirely with the treated or untreated graywater or though stored rainwater capture on site is subject only to Appendix A of the Guidelines.
5. At cemeteries, Sections 2.9, 2.10, and Appendix C of the Guidelines shall apply to new landscape installations and Sections 2.9, 2.10, and 3 of the Guidelines shall apply to landscape rehabilitation projects.

B. The irrigation efficiency requirements set forth in subsection T.1.c.ii of Section 9.16.040.070 (Landscaping Requirements) shall apply to:

1. All landscaped areas, whether installed prior to or after January 1, 2010; and
2. All landscaped areas installed after February 1, 2016 to which Section 9.16.040.065.A is applicable.

C. The landscape water efficiency provisions do not apply to the following:

1. Registered local, state, or federal historical sites;
2. Ecological restoration projects that do not require a permanent irrigation system; or
3. Mined-land reclamation projects that do not require a permanent irrigation system; or
4. Plant collections, as part of botanical gardens and arboretums open to the public.

D. The following submittals shall be required for all landscape projects subject to the landscape water efficiency provisions:

1. Prior to installation, a landscape documentation package shall be submitted to the City for review and approval of all landscape projects subject to the landscape water efficiency provisions. Any landscape documentation package submitted to the City shall comply with the provisions of the Guidelines.
2. The landscape documentation package shall include a certification by a professional, appropriately licensed in the State of California, stating that the landscape design and water use calculations have been prepared by, or under, the supervision of the licensed professional and are certified to be in compliance with the provisions of this chapter and the Guidelines.
 - a. Landscape and irrigation plans shall be submitted to the City for review and approval with appropriate water use calculations. Water use calculations shall be consistent with calculations contained in the Guidelines and shall be provided to the Water Department, as appropriate, under procedures determined by the City.
 - b. Verification of compliance of the landscape installation with the approved plans shall be obtained through a certificate of completion in conjunction with a certificate of use and occupancy or permit final process, as provided in the Guidelines.

Subsections P through T of Section 9.16.040.070 (Landscaping Requirements) of Section 9.16.040 (Commercial/Office, Industrial Development Standards) Chapter 9.16 of Title 9 of the Garden Grove Municipal Code are hereby amended and restated in their entirety to read as follows:

P. Landscaping and Irrigation Plans Required. Landscape and irrigation plans shall be required for all projects requiring approval by the hearing body and to which the landscape water efficiency provisions apply. Such plans shall be submitted for discretionary approval to the hearing body. Said plans shall be prepared in accordance with requirements and standards established pursuant to this Chapter and the Guidelines (specifically refer to sections on landscape design plan and irrigation design plan).

Q. In addition to the above, the following are requirements that shall apply to the landscape design plan and are more fully explained in the Guidelines (Appendix 1, Title 9):

1. Any plants may be used in a landscaped area, provided the estimated applied water use in the landscaped area does not exceed the maximum applied water allowance, and that the plants meet the specifications set forth in this section. The planting of trees is encouraged wherever it is consistent with the other provisions of this section. To encourage the efficient use of water, the following are highly recommended for inclusion in the landscape design plan: protection, preservation, and selection of non-invasive water-conserving plant, tree, and turf species; selection of plants based on local climate suitability, disease and pest resistance; selection of trees based on applicable City ordinances and guidelines and on size at maturity as appropriate for the planting area; selection of plants from local and regional landscape program plant lists; and selection of plants from local fuel modification plan guidelines.

2. Except as otherwise permitted in accordance with the Guidelines, plants having similar water use shall be grouped together in distinct hydrozones.

3. Plants shall be selected appropriately based upon their adaptability to the climatic, geologic and topographical conditions of the project site. Methods to achieve water efficiency shall include one or more of the following:

- a. Use the Sunset Western Climate Zone System, or equivalent generally accepted models, which takes into account temperature, humidity, elevation, terrain, latitude, and varying degrees of continental and marine influence on local climate;

b. Recognize the horticultural attributes of plants (i.e., mature plant size, invasive surface roots) to minimize damage to property or infrastructure (e.g., buildings, sidewalks, and power lines); allow for adequate soil volume for healthy root growth; and

c. Consider the solar orientation of the site and how plant placement will maximize summer shade and winter solar gain.

R. Irrigation Requirements.

1. All landscaped areas shall be provided with an approved irrigation system that meets the requirements of this Chapter and the Guidelines. An irrigation design plan meeting the design criteria in the Guidelines shall be submitted as part of the landscape documentation package for those projects subject to Section 9.16.040.065.A.

2. Irrigation shall be performed in conformance with the City's Water Conservation Program.

S. System Design. For the efficient use of water, an irrigation system shall meet all the requirements listed in the Irrigation Design Plan provisions of the Guidelines and in the manufacturer's recommendations. The irrigation system and its related components shall be planned and designed to allow for proper installation, management, and maintenance. An irrigation design plan meeting the design criteria of the Guidelines shall be submitted as part of the landscape documentation package. Smart automatic irrigation controllers shall be required for irrigation scheduling in all irrigation systems, recommending U.S. EPA WaterSense labeled devices as applicable.

T. In addition to the above, the following are requirements that shall apply to the landscape design plan.

1. Irrigation Design Criteria.

a. Runoff and Overspray. Soil types and infiltration rate shall be considered when designing irrigation systems. All irrigation systems shall be designed to avoid runoff, low-head drainage, overspray or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes (walks, etc.), roadways or structures.

b. Special attention shall be given to avoid runoff on slopes and to avoid overspray on areas less than ten (10)

feet in width in any direction. Such areas shall be irrigated with subsurface irrigation or other means that produce no runoff or overspray.

c. Irrigation Efficiency.

i. For new or rehabilitated landscape projects subject to Section 9.16.040.065.A, the estimated applied water use allowed for the landscaped areas shall not exceed the MAWA calculated using an ET adjustment factor of 0.55 for residential areas and 0.45 for non-residential areas, except for special landscaped areas where the MAWA is calculated using an ET adjustment factor of 1.0; or the design of the landscaped areas shall otherwise be shown to be equivalently water-efficient in a manner acceptable to the City, as provided in the Guidelines.

ii. Irrigation of all landscaped areas shall be conducted in a manner conforming to the rules and requirements, and shall be subject to penalties and incentives, for water conservation and water waste prevention as determined and implemented by the City.

iii. The project applicant shall understand and implement the requirements of the City's Water Conservation Program.

d. Equipment. The Guidelines provide design criteria for irrigation equipment in the "Irrigation Design Plan" provisions.

2. Recycled Water.

a. At such time as recycled water is available, the installation of recycled water irrigation systems (dual distribution systems) shall be required to allow for the current and future use of recycled water.

b. Irrigation systems shall make use of recycled water unless a written exemption has been granted by the local water agency, stating that recycled water meeting all health standards is not available and will not be available in the foreseeable future.

c. The recycled water irrigation systems shall be designed and operated in accordance with all local and State codes.

3. Irrigation Design Plan Specifications. Irrigation systems shall be designed to be consistent with hydrozones. Hydrozone areas shall be designated by number, letter, or other designation on both the Irrigation Design Plan and the Landscape Design Plan. The irrigation design plan shall be separate from, but use the same format as, the landscape design plan. The scale shall be the same as that used for the landscape design plan. The irrigation design plan shall fully meet those requirements found in the Guidelines, but at a minimum, shall contain:

a. Location and size of separate water meters for the landscape;

b. Location, type and size of all components of the irrigation system, including controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers and backflow prevention devices;

c. Static water pressure at the point of connection to the public water supply;

d. Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (psi) for each station;

e. Irrigation schedule parameters necessary to program smart timers specified in the landscape design;

f. The following statement: "I have complied with the Landscape Water Efficiency provisions and the design criteria in the Guidelines and applied them accordingly for the efficient use of water in the irrigation design plan;" and

g. The signature of a California-licensed landscape professional.

4. Maximum Applied Water Allowance. A project's maximum applied water allowance shall be calculated in a manner acceptable to the City, as provided in the Guidelines.

5. Irrigation Schedules. For the efficient use of water, all irrigation schedules shall be developed, managed, and evaluated to utilize the minimum amount of water required to maintain plant health. Irrigation schedules shall meet the following criteria:

a. Irrigation scheduling shall be regulated by smart automatic irrigation controllers.

b. Overhead irrigation shall be scheduled in accordance with the City's Water Conservation Program. Operation of the irrigation system outside the normal watering window is allowed

for auditing and system maintenance.

6. Certificate of Completion.

a. Landscape project installation shall not proceed until the landscape documentation package has been approved by the City and any ministerial permits required are issued.

b. The project applicant shall notify the City at the beginning of the installation work and at intervals, as necessary, for the duration of the landscape project work to schedule all required inspections.

c. Certification of completion of the landscape project shall be obtained through a certificate of use and occupancy or a permit final. The requirements for the final inspection and permit closure include submittal of:

- i. A landscape installation certificate of completion in the form included as Appendix E in the Guidelines, which shall include: (1) certification by a landscape professional that the landscape project has been installed per the approved landscape documentation package; and (2) the following statement: "The landscaping has been installed in substantial conformance with the design plans, and complies with the City of Garden Grove Landscape Water Efficiency Provisions for the efficient use water in the landscape." Where there have been significant changes (as determined by the City) made in the field during construction, these "as-built" or record drawings shall be included with the certificate. A diagram of the irrigation plan showing hydrozones shall be kept with the irrigation controller for subsequent management purposes.
- ii. Documentation of the irrigation scheduling parameters used to set the controller(s).
- iii. An irrigation audit report from a local agency irrigation auditor or third party certified landscape irrigation auditor, documentation of enrollment in regional or local water purveyors' water conservation programs, and/or documentation that the MAWA and EAWU information for the landscape project has been submitted to the City or other local water purveyor, may be required at the option of the City in accordance with the Guidelines. Landscape

audits shall not be conducted by the persons who designed or installed the landscape.

Section 9.18.120.025 (Water Efficiency Requirements) of Section 9.18.120 (Landscaping) of Chapter 9.18 (Mixed Use Regulations and Development Standards) of Title 9 of the Garden Grove Municipal Code is hereby amended and restated to read in its entirety as follows:

9.18.120.020 Water Efficiency Requirements

A. Applicability. The “landscape water efficiency provisions” set forth below and in Chapters 9.08, 9.12, and 9.16 of this Code (as defined in Sections 9.08.040.045, 9.12.040.075, and 9.16.040.055) shall apply to all development and landscape projects subject to this Chapter 9.18. Beginning February 1, 2016, and consistent with Executive Order No. B-29-15, the landscape water efficiency provisions shall apply to the following landscape projects:

1. New landscape projects with an aggregate landscaped area equal to or greater than 500 square feet requiring a building or landscape permit, plan check, or site plan or other discretionary review;
2. Rehabilitated landscape projects with an aggregate landscaped area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check or site plan or other discretionary review;
3. New or rehabilitated landscape projects with an aggregate landscaped area of 2,500 square feet or less may comply with the performance requirements of the landscape water efficiency provisions or conform to the prescriptive measures contained in Appendix A of the Guidelines.
4. For new or rehabilitated landscape projects using treated or untreated graywater or rainwater capture on site, any lot or parcel within the project that has less than 2,500 square feet of landscape area and meets the lot or parcel’s landscape water requirement (Estimated Total Water Use) entirely with the treated or untreated graywater or though stored rainwater capture on site is subject only to Appendix A of the Guidelines.
5. At cemeteries, Sections 2.9, 2.10, and Appendix C of the Guidelines shall apply to new landscape installations and Sections 2.9, 2.10, and 3 of the Guidelines shall apply to landscape rehabilitation projects.

B. Exceptions. The landscape water efficiency provisions do not apply to the following:

1. Registered local, state, or federal historical sites;

2. Ecological restoration projects that do not require a permanent irrigation system; or
3. Mined-land reclamation projects that do not require a permanent irrigation system; or
4. Plant collections, as part of botanical gardens and arboretums open to the public.

C. Irrigation Design Criteria. Water-efficient irrigation design criteria, as set forth in this section, shall apply to: all landscaped areas, whether installed prior to or after January 1, 2010; and all landscaped areas installed after February 1, 2016 to which this Section 9.18.120.020 is applicable.

1. Runoff and Overspray. Soil types and infiltration rate shall be considered when designing irrigation systems. All irrigation systems shall be designed to avoid runoff, low-head drainage, overspray or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes (walks, etc.), roadways or structures.
2. Special attention shall be given to avoid runoff on slopes and to avoid overspray on areas less than ten (10) feet in width in any direction. Such areas shall be irrigated with subsurface irrigation or other means that produce no runoff or overspray.
3. Irrigation Efficiency.
 - a. For new or rehabilitated landscape projects subject to Section 9.18.120.020.A, the estimated applied water use allowed for the landscaped areas shall not exceed the MAWA calculated using an ET adjustment factor of 0.55 for residential areas and 0.45 for non-residential areas, except for special landscaped areas where the MAWA is calculated using an ET adjustment factor of 1.0; or the design of the landscaped areas shall otherwise be shown to be equivalently water-efficient in a manner acceptable to the City, as provided in the Guidelines.
 - b. Irrigation of all landscaped areas shall be conducted in a manner conforming to the rules and requirements, and shall be subject to penalties and incentives, for water conservation and water waste prevention as determined and implemented by the City.

c. The project applicant shall understand and implement the requirements of the City's Water Conservation Program.

d. Equipment. The Guidelines provide design criteria for irrigation equipment in the "Irrigation Design Plan" provisions.

D. Documentation Required. The following shall be required of all landscape projects subject to these landscape water efficiency provisions.

1. Prior to installation, a landscape documentation package shall be submitted to the City for review and approval of all landscape projects subject to the landscape water efficiency provisions. Any landscape documentation package submitted to the City shall comply with the provisions of the Guidelines.

2. The landscape documentation package shall include a certification by a professional, appropriately licensed in the State of California, stating that the landscape design and water use calculations have been prepared by, or under, the supervision of the licensed professional and are certified to be in compliance with the provisions of this chapter and the Guidelines.

a. Landscape and irrigation plans shall be submitted to the City for review and approval with appropriate water use calculations. Water use calculations shall be consistent with calculations contained in the Guidelines and shall be provided to the Water Department, as appropriate, under procedures determined by the City.

b. Verification of compliance of the landscape installation with the approved plans shall be obtained through a certificate of completion in conjunction with a certificate of use and occupancy or permit final process, as provided in the Guidelines.

E. Landscape Water Efficiency Guidelines. Guidelines for implementation of the City of Garden Grove landscape water efficiency provisions referenced in this chapter have been adopted as an Appendix to Title 9 (Land Use Code) and are maintained on file in the offices of the Planning Division of the Community and Economic Development Department.