CITY OF CLAYTON
Founded 1857 . . . Incorporated 1964

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September 23, 2010

Peter Brostrom
California Department of Water Resources
Water Use and Efficiency Branch
Post Office Box 942836
Sacramento, California 94236-0001

Re.: City of Clayton Water Efficient Landscape Ordinance

Dear Mr. Brostrom:

The City of Clayton in Contra Costa County participated with a regional working group that included representatives from other jurisdictions in the region, including the Contra Costa Water District and the East Bay Municipal Utility District, to develop a base for an alternative, but equally effective, local water efficient landscape ordinance in relation to the Department of Water Resources (DWR) Model Water Efficient Landscape Ordinance (MWELO), as allowed by the Water Conservation in Landscaping Act of 2006. This local ordinance was considered by the Clayton Planning Commission at public meetings on August 10, 2010 and August 24, 2010 and by the Clayton City Council at public meetings on September 7, 2010 and September 21, 2010. The City Council formally adopted this ordinance at its public meeting of September 21, 2010; the ordinance will become effective 30 days after this formal adoption date.

Enclosed is a copy of this adopted local ordinance which includes the adopted landscape water conservation standards and pertinent citations that describe the development of the ordinance, the environmental determination, and findings, including findings related to this ordinance being equally effective to the MWELO. Implementation of this local landscape water conservation ordinance requires completion of specified certificates of compliance by qualified professionals related to Landscape Design, Landscape Installation, Landscape Water Audit, and Landscape Maintenance (See Attached). Moreover, this local ordinance requires the completion of Water Allowance Work Sheets to calculate water use in the form of Maximum Applied Water Allowance (MAWA) and Estimated Total Water Use (ETWU) if a landscape project has turf or other high water use plants not qualified as a "Special Landscape Area" or has water features(s) with more than one hundred (100) total square feet of surface area (See Attached).

The City of Clayton anticipates that implementation of its adopted local water efficient landscape ordinance should result in the City being in compliance with the Water Conservation in Landscaping Act of 2006.

Should you have any questions regarding the materials I am forwarding to you, Mr. Brostrom, please do not hesitate to contact me.

Sincerely,

David Woltering

David Woltering, AICP
Community Development Director
City of Clayton

Attachments:

1. City of Clayton Ordinance No. 429, Landscape Water Conservation Ordinance
2. Certificates of Compliance
3. Water Allowance Work Sheets

ORDINANCE NO. 429

AMENDING TITLE 17 OF THE CLAYTON MUNICIPAL CODE BY SUPERSEDING AND REPLACING THE "WATER CONSERVING LANDSCAPE GUIDELINES" IN THEIR ENTIRETY IN CHAPTER 17.80 WITH "LANDSCAPE WATER CONSERVATION STANDARDS" FOR THE PURPOSE OF IMPLEMENTING ASSEMBLY BILL (AB) 1881, THE WATER CONSERVATION IN LANDSCAPING ACT OF 2006 (ZOA 05-09)

THE CITY COUNCIL
City of Clayton, California

THE CITY COUNCIL OF THE CITY OF CLAYTON FINDS AS FOLLOWS:

WHEREAS, Assembly Bill (AB) 1881, passed in 2006, requires the California Department of Water Resources (DWR) to develop and implement a new State Landscape Water Conservation Ordinance (State Ordinance); and

WHEREAS, DWR developed the new State Ordinance, which became effective January 1, 2010; and

WHEREAS, all cities and counties in the State of California are to adopt and implement the State Ordinance as written or develop and adopt their own local ordinances that are equally effective in conserving landscape water usage; and

WHEREAS, in the circumstance that a city or county does not formally adopt either the State Ordinance or an equally effective local ordinance by the cited January 1, 2010 date, the State Ordinance becomes the effective default ordinance for local jurisdictions; and

WHEREAS, the Planning Commission reviewed the State Ordinance at its duly noticed meetings of November 10, 2009 and November, 24, 2009, and determined that the complexity of the State Ordinance would make it difficult to administer and implement and, accordingly, supported City staff working with representatives from other regional agencies, including other nearby cities and the County of Contra Costa, the Contra Costa Water District (CCWD), and the East Bay Municipal Utility District, with CCWD taking the lead in this effort to develop an equally effective alternative landscape water conservation ordinance; and,

WHEREAS, City staff participated with other regional representatives to develop an alternative landscape water conservation ordinance, which was developed and, subsequently, presented to the City's Planning Commission at a duly noticed public hearing on August 10, 2010, as a proposed amendment to Chapter 17.80 of the Clayton Municipal Code, whereby the "Water Conserving Landscape Guidelines" in Chapter 17.80 would be superseded and thereby replaced in their entirety with the proposed "Landscape Water Conservation Standards" for the purpose of implementing the Water Conservation in Landscaping Act of 2006; and

WHEREAS, at its duly noticed public hearing on August 10, 2010 regarding the "Landscape Water Conservation Standards" draft ordinance amendment, the Planning Commission received and considered Staff's report and background information, allowed for public comments and testimony, and discussed the information received, and directed staff to make certain modifications to the draft ordinance amendment, including direction that the City's Maintenance Supervisors be authorized to sign-off on certifications for public landscape and irrigation projects undertaken by City staff within the City of Clayton; and

WHEREAS, the Planning Commission continued the August 10, 2010 public hearing to a date certain, its next regular meeting of August 24, 2010, to allow staff to make the directed changes to the draft ordinance amendment prior to making a formal recommendation to the City Council; and

WHEREAS, at the continued public hearing on August 24, 2010, the Planning Commission reviewed the revised draft ordinance amendment, determined that the proposed amendment would qualify for a categorical exemption in accordance with Section 15061(b)(3) of the State California Environmental Quality Act (CEQA); determined this amendment would be in conformance with the General Plan; determined that the public necessity, convenience, and general welfare would require adoption of the proposed amendment; determined the proposed "Landscape Water Conservation Standards" would be equally effective in conserving landscape-related water usage as would the State Ordinance; and recommended City Council approval of the cited categorical exemption and proposed ordinance amendment; and

WHEREAS, on September 7, 2010 and September 21, 2010, the City Council held duly-noticed public hearings and gave due consideration to the Planning Commission's recommendation, testimony, comments, and documents received regarding the proposed "Landscape Water Conservation Standards" ordinance amendment; and

WHEREAS, the City Council determined this amendment of the Municipal Code would qualify for categorical exemption from CEQA in accordance with Section 15061(b)(3) of the CEQA Guidelines; and

WHEREAS, the City Council determined this amendment would be in conformance with the General Plan; determined the public necessity, convenience, and general welfare would require adoption of the amendment; and determined the proposed "Landscape Water Conservation Standards" would be equally effective in conserving landscape-related water usage as would the State Ordinance; and

WHEREAS, the City Council determined there is no evidence this amendment would have the potential for any individual or cumulative adverse effects on fish and wildlife resources or their habitat, as defined in Section 711.2 of the California Department of Fish and Game Code.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF CLAYTON DOES ORDAIN AS FOLLOWS:

SECTION 1. Title 17 of the Municipal Code shall be amended to supersede and thereby replace in Chapter 17.80 "Water Conserving Landscape Guidelines" in their entirety with the proposed "Landscape Water Conservation Standards", referred to and incorporated herein and provided as an Attachment hereto.

SECTION 2. If any provision of this Ordinance, or the application thereof to any person or circumstances, is held to be unconstitutional or to be otherwise invalid by any court competent jurisdiction, such invalidity shall not affect other provisions or clauses of this Ordinance or application thereof which can be implemented without the invalid provisions, clause, or application, and to this end such provisions and clauses of the Ordinance are declared to be severable.

SECTION 3. This Ordinance shall become effective thirty (30) days from and after its passage. Within fifteen (15) days after the passage of the Ordinance, the City Clerk shall cause it to be posted in three (3) public places heretofore designated by resolution of the City Council for the posting of ordinance and public notices. Further, the City Clerk is directed to cause the Attachment hereto to be entered in the City of Clayton Municipal Code

The foregoing Ordinance was introduced at a regular meeting of the City Council of the City of Clayton held on September 7, 2010.

Passed, adopted, and ordered posted by the City Council of the City of Clayton at a regular meeting thereof held on September 21, 2010, by the following vote:

AYES: Mayor Stratford, Vice Mayor Shuey, Councilmembers Geller, Medrano and Pierce.

NOES: None.

ABSENT: None.

ABSTAIN: None.

THE CITY COUNCIL OF CLAYTON

Hank Stratford, Mayor

ATTEST

Laci J. Jackson, City Clerk

APPROVED AS TO FORM

Dan Adams, City Attorney

APPROVED BY ADMINISTRATION

Gary A. Napper, City Manager

I hereby certify that the foregoing Ordinance was duly introduced at a regular meeting of the City Council of the City of Clayton held on September 7, 2010, and was duly adopted, passed, and ordered posted at a regular meeting of the City Council held on September 21, 2010.

Laci J. Jackson, City Clerk

Attachment: "Landscape Water Conservation Standards"

ZOA\2009\05-09.ordlattorney

Chapter 17.80

LANDSCAPE WATER CONSERVATION STANDARDS

Sections:

17.80.010 Title and Purpose. This Chapter shall be known and may be cited as the Landscape Water Conservation Standards Ordinance of the City of Clayton for the purpose of implementing within Clayton the Water Conservation in Landscaping Act of 2006.

17.80.020 Definitions. Certain words and phrases are defined within this Chapter and the definitions herein apply to this Chapter only. Where it appears from the context of such words, phrases, or provisions that a different meaning is intended, the definition shall be determined by the Community Development Director.

A. "Applicant" means the individual or entity submitting a Landscape Project Application (LPA) required under Section 17.80.040 of this Chapter to request a permit, plan check, or design review from the City of Clayton, or requesting new or expanded water service from the local water district. A project applicant may be the property owner or his or her designee.

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

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

D. "Certified irrigation system auditor" means a person certified by the U.S. Environmental Protection Agency's WaterSense Irrigation Partners Program.

E. "Conversion factor (0.62)" means the number that converts acre-inches per acre per year to gallons per square foot per year.

F. "Emission Device" means any device that is contained within an irrigation system that is used to apply water. Common emission devices in an irrigation system include, but are not limited to, spray and rotary sprinkler heads, bubblers, and drip irrigation emitters.

G. "Estimated Total Water Use (ETWU)" means the estimated total water used for the landscape, as described in the City of Clayton Water Allowance Work Sheet.

H. "ET adjustment factor (ETAF)" means a factor of 0.7, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency which are two major influences upon the amount of water that needs to be applied to the landscape. ETAF for a Special Landscape Area shall be 1.0.

I. "ETo" stands for Reference Evapotranspiration, and means the water loss from a large field of 4-7 inch-tall, cool-season grass that is not water stressed. Local ETo numbers can be found through the California Irrigation Management Information System (CIMIS).

J. "Evapotranspiration" means the combination of water transpired from plants and evaporated from the soil and plant surfaces.

K. "Flow rate" means the rate at which water flows through pipes, valves, and emission devices, measured in gallons per minute, gallons per hour, or cubic feet per second.

L. "Geometry" means the size, shape, and angles of an area.

M. "Hardscape" means any durable material (pervious and non-pervious).

N. "Hydrozone" means a portion of the landscaped area having plants with similar water needs. This ordinance uses the publication *Water Use Classification of Landscape Species* (WUCOLS) to determine a plant's water needs. A hydrozone may be irrigated or non-irrigated.

O. "Landscape water audit" means an in-depth evaluation of the installed landscape to verify the landscape complies with the Water-Efficient Landscape Standards of the City of Clayton Landscape Water Conservation Standards Ordinance, and completes the Certificate of Compliance for a Landscape Water Audit.

P. "Irrigation efficiency (IE)" 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 this Chapter is 71% or greater. Greater irrigation efficiency can be expected from well-designed and well-maintained systems.

Q. "Irrigation survey" means an evaluation of an irrigation system that is less detailed than an irrigation audit. An irrigation survey includes, but is not limited to, inspection, system test, and recommendations to improve performance of the irrigation system.

R. "Irrigation water use analysis" means an analysis of water use data based on meter readings and billing data.

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

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

U. "Lateral line" means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.

V. "Maximum Applied Water Allowance (MAWA)" means the upper limit of annual applied water for the established landscaped area, as specified in the City of Clayton "Water Allowance Work Sheets".

W. "Medians" mean any planting area that separates traffic lanes on streets and parking areas in parking lots.

X. "Mulch" means any organic material, such as leaves, bark, straw, or compost; or inorganic mineral materials, such as rocks, gravel, and decomposed granite left loose and applied to the soil surface for the beneficial purposes of reducing evaporation, suppressing weeds, moderating soil temperature, and preventing soil erosion.

Y. "Non-Permeable" means any surface or material that will not allow the passage of water through that surface or material and into the underlying soil at a rate that ensures run-off will not occur.

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

AA. "Overhead irrigation" means systems that deliver water through the air (e.g., sprayheads and rotors).

BB. "Overspray" means the irrigation water that is delivered beyond the target area.

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

DD. "Plant factor" or "plant water use factor" is a factor that, when multiplied by ETo, estimates the amount of water needed by plants. The plant factors for this Chapter are from the WUCOLS publication.

EE. "Precipitation rate" for this Chapter means the rate of application of water measured in inches per hour.

FF. "Project" means the total area comprising the landscape area, as defined in this Chapter.

GG. "Rain switch" or "rain sensing shutoff device" means a component that automatically suspends an irrigation event when it rains.

HH. "Reference evapotranspiration" or "ETo" means a standard measurement of environmental parameters that affect the water use of plants.

II. "Rehabilitated landscape" means any re-landscaping project that requires a permit, plan check, or design review, or requires a new or expanded water service application.

JJ. "Retail water supplier" means any entity, including a public agency, city, county, district or private water company that provides retail water service.

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

LL. "Smart irrigation controllers" means controllers using weather information or soil moisture readings along with site information to automatically adjust the irrigation schedule on a daily basis.

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

NN. "Special Landscape Area (SLA)" means an area of the landscape dedicated solely to edible plants, such as vegetable gardens or orchards, areas irrigated with recycled water, water features using recycled water, cemeteries, and areas dedicated to active play, such as parks, sports fields, and golf courses where turf provides a playing surface.

OO. "Sprinkler head" means a device that delivers water through a nozzle.

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

QQ. "Turf" means a ground cover surface of mowed grass. Kentucky bluegrass, Perennial ryegrass, Red fescue, and Tall fescue are examples of cool-season grasses. Bermuda grass, Kikuyu grass, Seashore Paspalum, St. Augustine grass, Zoysia grass, and Buffalo grass are examples of warm-season grasses.

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

SS. "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).

TT. "WUCOLS" means the Water Use Classification of Landscape Species, published by the University of California Cooperative Extension, the Department of Water Resources, and the Bureau of Reclamation, 2000. (WUCOLS) report is available at http://www.water.ca.gov?wateruseefficiency/publications/. Search for WUCOLS, and then go to Part 2 WUCOLS III* 1999 Edition.

17.80.030 Applicability. After October 21, 2010 the indicated provisions of this Chapter shall apply to landscape projects as follows:

A. Developer Projects: New and rehabilitated landscape development for commercial, multi-family, and single family projects with irrigated landscape areas cumulatively equal to or greater than 2,500 square feet and requiring a building permit, grading permit, plan check, or design review shall complete the Landscape Project Application (LPA) described in Section 17.80.040, and comply with all other Sections of this Chapter.

B. Municipality and Public Agency Projects: New and rehabilitated projects designed and installed by the City of Clayton with irrigated landscape areas cumulatively equal to or greater than 2,500 square feet shall comply with Sections 17.80.050, 17.80.060, 17.80.070, 17.80.080, 17.80.090, and 17.80.100.

C. Owner-Directed Single Family Projects: New and rehabilitated owner-directed single family projects with irrigated landscape areas cumulatively equal to or greater than 5,000 square feet and requiring a building permit, grading permit, plan check, or design review shall complete the Landscape Project Application (LPA) described in Section 17.80.040, and comply with all other Sections, except Section 17.80.090, of this Chapter.

D. Existing Landscapes: Existing landscapes are only subject to the provisions in Section 17.80.110, "Provisions for Existing Landscapes" and Section 17.80.120, "Public Education".

E. The provisions of this Chapter shall not apply to:

1. Landscapes that are only temporarily irrigated for establishment purposes and landscapes that are not irrigated with a permanent irrigation system.

2. Registered local, state or federal historical sites, or as may otherwise be determined by the City Council;

3. Community gardens, botanical gardens and arboretums open to the public.

17.80.040 Landscape Project Application (LPA) Requirements. Applicant shall choose one of the two options below to comply with this Chapter:

A. Option A: Proposed landscape project does not include any:

1. Water features with more than 100 square feet of total surface area;" or

2. Turf or other high water use plants, unless they qualify as a "Special Landscape Area. High water use plants are those designated as 'high water use' in the Water Use Classification of Landscape Species (WUCOLS) report[1]."

For this option, the applicant shall complete the following:

1. Project Application Sheet.

2. Certification Sheets.

3. Landscape Plans (See Section 17.80.060);

4. Maintenance Schedule (See Section 17.80.090).

B. Option B: Proposed landscape project does include:

1. Water features with more than 100 square feet of total surface area; or

[1] Water Use Classification of Landscape Species (WUCOLS) report which is available at http://www.water.ca.gov?wateruseefficiency/publications/ A Guide to Estimating, Part 2.

2. Turf or other high water use plants not qualifying as a "Special Landscape Area." The Estimated Total Water Use (ETWU) for the proposed landscape shall not exceed the Maximum Applied Water Allowance (MAWA) for the site. The MAWA formula will use an ET Adjustment Factor of 0.7.

For this option, the applicant shall complete the following:

1. Project Application Sheet.

2. Certification Sheets.

3. Water Allowance Work Sheets.

4. Landscape Plans (See Section 17.80.060).

5. Maintenance Schedule (See Section 17.80.090).

An applicant requesting design review approval shall submit, at a minimum, a preliminary landscaping plan with the design review application; however, the applicant must submit all components of the Landscape Project Application (LPA) concurrently with the application for building permit or grading permit for the project.

The Community Development Director or his/her designee shall review each LPA for compliance with the provisions of this Chapter and may withhold issuance of zoning approval for a building permit or grading permit for which its corresponding LPA does not comply with this Chapter.

17.80.050 Water Efficient Landscape Standards. The proposed landscape design shall incorporate the most recent acceptable best management practices as determined by the City of Clayton for water-efficient landscape design and shall comply with the following standards:

A. Plant Design:

1. Plants selected shall be well suited to the area's climate and the site's soil conditions.

2. The proposed landscape shall be designed so that distinct hydrozones are irrigated separately by one or more irrigation valves. A hydrozone is an area with similar sun exposure, irrigation precipitation rate, soil conditions, slope, and plant material with similar water needs. Refer to the WUCOLS report for plant water needs.

3. Plants shall be spaced appropriately based on their expected mature spread.

4. If the geometry of the planting area does not conform to the spray pattern of the sprinkler, resulting in overspray onto the adjacent pavement, then overhead irrigation shall not be used.

5. Plants shall be spaced so that at mature size they do not block sprinklers.

6. Turf shall not be planted on slopes steeper than 15%.

7. Turf shall not be planted in any medians or in areas narrower than 8'0".

B. Irrigation System:

The irrigation system design shall comply with the following requirements:

1. Smart irrigation controller(s) using one of the below methods shall be required on all irrigation systems:

   a. Daily evapotranspiration data; and

   b. Daily soil moisture sensor data.

2. Specify a dedicated landscape water meter for landscapes with an irrigated area greater than 5,000 square feet, or per retail water supplier regulations.

3. Recycled water shall be used for landscape irrigation if it is available at the project site.

4. Specify technology and practices to prevent runoff, low head drainage, overspray, or other water waste.

5. Overhead irrigation shall not be permitted within 12" of any non-permeable surface.

6. Specify sprinkler heads and other emission devices that have matched precipitation rates within each irrigation zone. No irrigation zone shall specify a precipitation rate greater than 1.2 inches per hour. On slopes steeper than 25%, the specified precipitation rate shall not exceed 0.75 inches per hour.

7. Specify irrigation controls so the dynamic water pressure at sprinkler head or other emission device is within manufacturer's recommended optimal operating range.

8. No overhead irrigation shall be specified in planting areas less than 8'0" wide in any dimension, unless demonstrated that water waste will not occur.

9. Specify a manual shut-off valve for each point of connection and specify that each shut-off valve be identified on the controller map.

10. Prepare a controller map and programming table and specify that this be stored in the controller cabinet. The controller map shall visually differentiate each controller zone. For each irrigation valve, the controller programming table shall list the plant water requirement (high, medium,

low, or very low), the sun exposure, irrigation emission device type, precipitation rate, station flow rate, optimal pressure, soil type, infiltration rate, square foot area, and degree of slope.

11. Each irrigation valve shall control irrigation to only one distinct hydrozone. A hydrozone is an area with similar sun exposure, irrigation precipitation rate, soil conditions, slope, and plant material with similar water needs. Refer to the WUCOLS report for plant water needs.

12. Specify a separate irrigation valve and hydrozone for the top of a slope and the bottom of a slope.

C. Water Features:

1. All water features shall have re-circulating water systems.

2. Fountain(s) shall be designed so that no wind drift or overspray occurs.

D. Grading and Soil Preparation:

The landscape design shall:

1. Comply with Storm Water Control Plan requirements (C.3), if applicable.

2. Be designed to improve or maintain the infiltration rate of landscape soils typical of their soil texture and minimize soil erosion.

3. Be designed to avoid drainage onto non-permeable hardscapes within the property lines and prevent runoff of all irrigation and natural rainfall outside property lines.

4. Only specify soil amendments if appropriate for the selected plants.

5. Specify a minimum two-inch layer of mulch shall be applied on all exposed soil surfaces of planting areas unless there is a horticultural reason not to use mulch in a portion of the planting area. Mulch, such as shredded bark, shall be specified in bioretention areas so that they will stay in place during rain events.

17.80.060 Landscape Plan Requirements. The Landscape plans shall demonstrate that all the water-efficient landscape standards have been met:

A. The planting plan shall:

1. Identify Special Landscape Areas. Special Landscape Areas include: landscape dedicated solely to edible plants, such as vegetable gardens or orchards, areas irrigated with recycled water, water features using recycled water, cemeteries, and areas dedicated to active play, such as parks, sports fields, and golf courses where turf provides a playing surface.

2. Identify plants by their common and botanical names.

3. Identify type and surface area of water features.

B. The irrigation plan shall:

1. Show the location and size of the landscape irrigation water meter.

2. Show the location, type and size of all components of the irrigation system, including, but not limited to, controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, pressure regulators, and backflow prevention devices.

3. Identify the static water pressure at the point of connection to the public water supply.

4. Identify the flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (pressure per square inch) for each station.

C. Landscape plans shall include details and specifications reflecting the most recent acceptable best management practices as determined by the City of Clayton for water-efficient landscape design.

17.80.070 Landscape Water Audit Requirements. A landscape water audit shall be performed to ensure that the installed landscape meets the requirements of this Chapter.

A. A landscape water audit shall be conducted within thirty (30) days of the start of the landscape maintenance period or, if no maintenance period, then, immediately, upon completion of the landscape installation. An EPA WaterSense certified Irrigation System Auditor shall conduct the landscape audit and submit a Certificate of Compliance, Landscape Water Audit sheet.

B. The Landscape Auditor shall inform the applicant of all non-compliance issues with the Ordinance. This shall include, but not be limited to, all items listed on the Certificate of Compliance, Landscape Water Audit sheet.

C. All non-compliance issues shall be repaired and the site shall be re-audited for compliance with the criteria of this Chapter prior to final inspection/permit and final sign off.

17.80.080 Certifications. Water Efficiency Landscape Checklist/Certification sheets will be part of the Landscape Project Application (LPA) requirements.

A. The person(s) creating the landscape design shall complete the Certificate of Compliance, Landscape Design sheet certifying the landscape has been designed to comply with the criteria of this Chapter.

B. The Landscape Contractor/Installer shall complete the Certificate of Compliance, Landscape Installation sheet certifying the landscape has been installed, as specified in the Landscape Plans, and complies with the criteria of this Chapter.

C. he Landscape Auditor shall complete the Landscape Certificate of Compliance, Water Audit sheet certifying the landscape and irrigation system have been installed, as specified in the Landscape Plans, and comply with the criteria of this Chapter.

D. The Maintenance Contractor/Person shall complete the Certificate of Compliance, Landscape Maintenance sheet certifying the landscape maintenance contractor agrees to manage the property using less water than the Maximum Applied Water Allowance.

E. While standards applications are not required for Municipality and Public Agency Projects involving "City" projects conducted by City staff, certifications (i.e., Design, Installation, Maintenance, and Auditing) are needed and the City's Maintenance Supervisors may sign-off on them.

17.80.090 Landscape and Irrigation Maintenance Schedule. The landscape designer or installer shall develop a landscape maintenance specification and schedule for the landscape project that is consistent with the most recent acceptable best management practices as determined by the City of Clayton for landscape maintenance. Schedules shall be submitted with the Certification of Completion.

A. An annual landscape maintenance schedule shall include at least the following: routine inspection; adjustment and repair of the irrigation system and its components; aerating turf areas; replenishing mulch; seasonal pruning; weeding in all landscape areas; and removing obstructions to emission devices;

B. Repair of all irrigation equipment shall be done with the originally installed components or their equivalents;

C. Project shall be irrigated so that total annual water applied is less than or equal to the Maximum Applied Water Allowance (MAWA) (if applicable).

17.80.100 Stormwater Management. All applicable projects shall comply with the requirements of the National Pollutant Discharge Elimination System intended to implement storm water best management practices into the planting, irrigation, and grading plans to minimize runoff and to increase on-site retention and infiltration.

17.80.110 Provisions for Existing Landscapes. This section applies to existing landscapes that were installed before October 21, 2010.

A. Irrigation Survey and Irrigation Water Use Analysis

To ensure the efficient use of landscape water, each owner of property in the City of Clayton is encouraged to utilize resources and services, such as

irrigation surveys and landscape water use analyses that are offered by the local retail or wholesale water utility.

B. Water Waste Prevention

Each owner of property in the City of Clayton shall prevent water waste resulting from inefficient landscape irrigation by prohibiting runoff from the target landscape areas due to excessive irrigation or inappropriate run times related to time of day, seasonal and/or variable weather conditions, low head drainage, overspray, or other similar conditions where water flows onto an adjacent property, walks, roadways, parking lots, or structures.

17.80.120 Public Education.

A. All new model homes that are landscaped shall use signs, brochures and other written information to demonstrate the principles of water-efficient landscapes that are described in this Chapter.

B. The architectural guidelines of a common interest development, which include homeowner associations, community apartment projects, condominiums, planned developments, and stock cooperatives, shall not prohibit activities or conditions that have the effect of allowing the use of low water use plants as a group.

C. For new homes/commercial developments, applicant/owner is required to provide the irrigation controller map and programming table and annual maintenance schedules to new tenants or owners at transfer of ownership/maintenance responsibility.

D. The City of Clayton shall provide on its website links to resources that offer information about the principals of designing, installing, and maintaining water-efficient landscapes. An example of a link is to the local water utility, the Contra Costa Water District, and the landscape water conservation information that Agency offers.

Certificate of Compliance
Landscape Design

Project Name: _____ Project Address/ Parcel No.:_____

Applicant Name: _____ Applicant Address:_____

Project Area Measurements

Total turf area: _____square feet
Total non-turf landscape area: _____square feet
Total water feature area: _____square feet

☐ Landscape design has zero (0) square feet of turf that is not specified as "special landscape area" and has water feature(s) with total surface area > 100 square feet

OR

☐ Landscape design includes: 1) turf that is not specified as "special landscape area"; or 2) water feature(s) with > 100 square feet of total surface area. If this box is checked, applicant must prepare a site-specific water budget to demonstrate that the landscape is designed to use less than the Maximum Applied Water Allowance. Complete Water Allowance Work Sheets (Attachment F) of the Water Efficient Landscape Ordinance.

Landscape Design Requirements:

☐ Design incorporates most recent acceptable best management practices for water-efficient landscape design
☐ Submit landscape plans, including planting, irrigation, and installation details
☐ Plants selected are well suited to the local climate and soil conditions
☐ Plants are spaced appropriately based on their expected mature size
☐ Overhead irrigation not used if irrigation results in overspray
☐ Plants are spaced so at mature size they do not block sprinklers
☐ Distinct hydrozones are irrigated separately by one or more irrigation valves
☐ No turf is specified in medians, areas narrower than eight feet, or on slopes greater than 15%
☐ Plan specifies smart irrigation controller(s) utilizing ET or soil moisture sensors
☐ Plan specifies separate water meter(s) for landscape irrigation per the retail water supplier regulations
☐ Recycled water is used if available
☐ Technology and practices are incorporated to prevent run-off, low head drainage and overspray
☐ No overhead irrigation is specified within 12 inches of any non-permeable surface
☐ Sprinkler stations have matched precipitation rates for each irrigation zone with a maximum precipitation rate of 1.2 inches per hour ("/hr) or 0.7"/hr for all slopes of 25% or greater
☐ Irrigation controls are specified to maintain dynamic water pressure at sprinkler heads and other emission devices within manufacturer's specifications
☐ No overhead irrigation is specified in areas less than eight feet wide in any direction
☐ Manual shutoff valves are specified at each point of connection
☐ Irrigation plan includes or specifies that controller map(s) and programming table(s) shall be placed in all irrigation controller cabinets
☐ Plan specifies a separate irrigation valve and hydrozone for the top of a slope and bottom of a slope
☐ A re-circulation system has been specified for all water features
☐ Fountain(s) is designed and nozzles are specified so that no wind drift or overspray will occur
☐ Design complies with Storm Water Control Plan requirements
☐ Design minimizes any soil erosion from construction activities and maintains or improves the landscape soil's infiltration rate
☐ Design to avoid drainage onto non-permeable hardscapes within the project and prevent runoff of irrigation and rainfall outside property lines
☐ Only specify soil amendments that are appropriate for the selected plants
☐ Plan specifies a minimum of 2 inches of mulch specified for all exposed soil surfaces in non-turf planting areas

I/we certify that the landscape plans for the above-listed project comply with the Water-Efficient Landscape Standards and Landscape Plan Requirements of the (*ENTITY NAME*) Water Efficient Landscape Ordinance.

_____ _____ _____
Designer's Name Company Name Date

_____ _____
Address Telephone

_____ _____
Email Professional License Number

Professional Stamp

Certificate of Compliance
Landscape Installation

Project Name: _____ Project Address/ Parcel No.:_____

Applicant Name: _____ Applicant Address:_____

- ☐ Installed Project Area Measurements match those of the Landscape Design Plans
- ☐ Plant material is the same as that specified in the plans and any substitutes are determined to be equivalent or less in water need, per *Water Use Classification of Landscape Species* (WUCOLS)
- ☐ Installation incorporates most recent acceptable best management practices for water-efficient landscape design
- ☐ Any plant substitutes used are well suited to the local climate and soil conditions
- ☐ All plants are located per the design plans
- ☐ Irrigation hydrozones are the same as plans and any field-adjusted irrigation zones were installed so that distinct hydrozones are irrigated separately by one or more irrigation valves
- ☐ No turf is installed in medians, areas narrower than eight feet, or on slopes greater than 15%
- ☐ All irrigation equipment is the same as specified, and any substitutes are equivalent
- ☐ Automatic irrigation controller(s) installed utilize ET or soil moisture sensors
- ☐ Point of Connection (POC) is the same as specified in plans
- ☐ System has been installed and tested to prevent run-off, low head drainage, and overspray
- ☐ No overhead irrigation is installed within 12 inches of any non-permeable surface
- ☐ Sprinkler stations have matched precipitation rates for each irrigation zone, with a maximum precipitation rate of 1.2 inches per hour ("/hr) or 0.7"/hr for all slopes of 25% or greater
- ☐ No overhead irrigation is installed in areas less than eight feet wide in any direction
- ☐ Manual shutoff valves are specified at each POC
- ☐ A controller map and programming table were placed in all irrigation controller cabinets
- ☐ Separate irrigation valves were installed and hydrozones created for the top of a slope and bottom of a slope
- ☐ All water features have functioning re-circulating water systems
- ☐ Fountain(s) and their nozzles are installed so that no wind drift or overspray will occur
- ☐ Installation complies with Storm Water Control Plan requirements
- ☐ Installation work minimized any soil erosion and maintained or improved the landscape soil's infiltration rate
- ☐ Installation avoids drainage onto non-permeable hardscapes within the project and prevents run-off of irrigation and rainfall outside property lines
- ☐ Only specified soil amendments that are appropriate for the selected plants were used
- ☐ A minimum of 2 inches of mulch was applied to all exposed soil surfaces in non-turf planting areas

I/we certify that the landscape has been installed as specified in the landscape plans for the above-listed project to comply with the Water-Efficient Landscape Standards and Landscape Plan Requirements of the (*ENTITY NAME*) Water Efficient Landscape Ordinance.

_____ _____ _____

Installer's Name Company Name Date

_____ _____

Address Telephone

_____ _____

Email Professional License Number

Professional Stamp

Certificate of Compliance
Landscape Water Audit

Project Name: _____ Project Address/ Parcel No.:_____

Applicant Name: _____ Applicant Address:_____

- ☐ Installed Project Areas match those of the Landscape Design Plans
- ☐ Plant material is the same as that specified on the plans, with any plant material substitutes being equivalent or less in water need, per *Water Use Classification of Landscape Species* (WUCOLS)
- ☐ Project has incorporated most recent acceptable best management practices for water-efficient landscape design
- ☐ Plants used are well suited to the local climate and soil conditions
- ☐ Plants are spaced appropriately based on their expected mature size
- ☐ Overhead irrigation was not used where it would result in overspray
- ☐ Plants are spaced so at mature size they do not block sprinklers
- ☐ Distinct hydrozones are irrigated separately by one or more irrigation valves
- ☐ No turf is planted in medians, areas narrower than eight feet, or on slopes greater than 15%
- ☐ Smart irrigation controller(s) utilizing ET or soil moisture sensors are installed
- ☐ Point of Connection (POC) is same as specified in plans
- ☐ Recycled water is used, if available
- ☐ Irrigation system has no run-off, low head drainage, and overspray
- ☐ No overhead irrigation is installed within 12 inches of any non-permeable surface
- ☐ Sprinkler stations have matched precipitation rates for each irrigation zone, with a maximum precipitation rate of 1.2 inches per hour ("/hr) or 0.7"/hr for all slopes of 25% or greater
- ☐ Dynamic water pressure at sprinkler heads and other emission devices is within manufacturer's specifications
- ☐ No overhead irrigation is installed in areas less than eight feet wide in any direction
- ☐ Manual shutoff valves are installed at each POC
- ☐ Controller map(s) and programming table(s) are in all irrigation controller cabinets
- ☐ Separate irrigation valves are installed for the top of a slope and bottom of a slope, and designated as separate hydrozones
- ☐ A re-circulation system has been installed for all water features
- ☐ Fountain(s) and their nozzles have no wind drift or overspray
- ☐ Project complies with Storm Water Control Plan requirements
- ☐ Site's landscape soils infiltration rate is the same as or better than native soil of area
- ☐ Project does not drain onto non-permeable hardscapes within the project, and no run-off of irrigation and rainfall can occur outside property lines
- ☐ Only specified soil amendments that are appropriate for the selected plants were used on project
- ☐ A minimum of 2 inches of mulch is installed for all exposed soil surfaces in non-turf planting areas

I/we certify that the landscape for the above-listed project complies with the Water-Efficient Landscape Standards of the (*ENTITY NAME*) Water Efficient Landscape Ordinance.

_____ _____ _____

Auditor's Name Company Name Date

_____ _____

Address Telephone

_____ _____

Email Certification Number

Professional Stamp

Certificate of Compliance
Landscape Maintenance

Project Name: _____ Project Address/ Parcel No.:_____

Applicant Name: _____ Applicant Address:_____

- ☐ Changes in total landscape area shall be reported to the local water utility
- ☐ Maintenance practices incorporate most recent acceptable best management practices for water-efficient landscape maintenance
- ☐ Plants selected for replanting are well suited to the local climate and soil conditions
- ☐ Plants for replanting are spaced appropriately based on their expected mature size
- ☐ Any changes to overhead irrigation do not result in overspray
- ☐ Replacement plants are spaced so at mature size they do not block sprinklers
- ☐ Changes to irrigation system or plant material shall maintain distinct hydrozones that are irrigated separately by one or more irrigation valves
- ☐ Medians, areas narrower than eight feet, or on slopes greater than 15%, shall not be replanted in turf
- ☐ Smart irrigation controller(s) utilizing ET or soil moisture sensors are in the ET or sensor mode
- ☐ The existing irrigation point of connection (POC) is used for any irrigation system changes
- ☐ Maintenance practices are incorporated to prevent run-off, low head drainage, and overspray
- ☐ No overhead irrigation can be moved within 12 inches of any non-permeable surface
- ☐ Sprinkler stations have matched precipitation rates for each irrigation zone with a maximum precipitation rate of 1.2 inches per hour ("/hr) or 0.7"/hr for all slopes of 25% or greater
- ☐ Irrigation controls are used to maintain dynamic water pressure at sprinkler heads and other emission devices within manufacturer's specifications
- ☐ No overhead irrigation is used in areas less than eight feet wide in any direction
- ☐ Manual shutoff valves are maintained at each point of connection
- ☐ A copy of the controller map(s) and programming table(s) are kept in all irrigation controller cabinets
- ☐ Separate irrigation valves and hydrozones are maintained for the top of a slope and bottom of a slope
- ☐ Re-circulation system(s) is maintained for all water features
- ☐ Fountain(s) and their nozzles are maintained so that no wind drift or overspray will occur
- ☐ Maintenance practices comply with Storm Water Control Plan requirements
- ☐ Infiltration rates for site's landscape soils are maintained or improved with site maintenance practices
- ☐ Site is maintained to avoid drainage onto non-permeable hardscapes within the project and prevent run-off of irrigation and rainfall outside property lines
- ☐ Only use soil amendments that are appropriate for any replacement plants
- ☐ Maintain a minimum of 2 inches of mulch for all exposed soil surfaces in non-turf planting areas

I/we certify that the landscape maintenance for the above-listed project will comply with the Water-Efficient Landscape Standards of the (*ENTITY NAME*) Water Efficient Landscape Ordinance and the Landscape Maintenance Schedule created for this project.

_____ _____ _____

Designer's Name Company Name Date

_____ _____

Address Telephone

_____ _____

Email Professional License Number

Professional Stamp

Water Allowance Work Sheets

Water Allowance Work Sheets are used to calculate water use in the form of Maximum Applied Water Allowance (MAWA) and Estimated Total Water Use (ETWU) for the landscape project.

These sheets are required if the project has turf or other high water use plants not qualified as a 'Special Landscape Area' or has water feature(s) with more than one hundred (100) total square feet of surface area. This is referred to as Option B of the Landscape Project Application Requirements of the Water-Efficient Landscape Ordinance.

Special Landscape Area is defined as an area of the landscape dedicated solely to edible plants, areas irrigated with recycled water, water features using recycled water, and areas dedicated to active play, such as parks, sports fields and golf courses where turf provides a playing surface.

The ETWU for the project can not exceed the MAWA for the project.

Calculate the MAWA for the project using the below formula and Factors:

$$MAWA = (ETo)\ (0.62)\ [(0.7 \times LA) + (0.3 \times SLA)]$$

Where:

MAWA	=	Maximum Applied Water Allowance (gallons per year)
ETo	=	Reference Evapotranspiration (inches per year)
0.62	=	Conversion Factor (to gallons)
0.7	=	ET Adjustment Factor (ETAF)
LA	=	Landscape Area including SLA (square feet)
0.3	=	Additional Water Allowance Factor for SLA
SLA	=	Special Landscape Area (square feet)

Step one: Multiple total project landscape area by 0.7, the ET Adjustment Factor

LA	Multiply	0.7	Equals	0.7 x LA
	x		=	

Step two: Multiple total Special Landscape Area by 0.3, the Additional Water Allowance Factor

SLA	Multiply	0.3	Equals	0.3 x SLA
	x		=	

Step 3: Add Adjusted LA and adjusted SLA Water Allowances

0.7 x LA	Plus	0.3 x SLA	Equals	0.7 x LA + 0.3 SLA
	+		=	

Step four: Multiple Reference Evapotranspiration by the conversion factor and Total Adjusted Water Allowance

ETo	Multiply	Conversion factor	Multiply	0.7 x LA + 0.3 x SLA	Equals	**MAWA**
	x	0.62	x		=	

Calculate the ETWU for the project using the below formula and Factors. A Hydrozone Table will need to be completed prior to completing the ETWU calculation, to determine the total area by hydrozone type.

$$ETWU = (ETo)(0.62)\left(\frac{PF\ x\ HA}{0.71} + SLA\right)$$

Where:

ETWU	=	Estimated Total Water Use per year (gallons)
ETo	=	Reference Evapotranspiration (inches)
PF	=	Plant Factor (see Definitions)
HA	=	Hydrozone Area [high, medium, low and very low water use areas] (square feet)
SLA	=	Special Landscape Area (square feet)
0.62	=	Conversion Factor
0.71	=	Irrigation Efficiency

Step one: Multiple the Plant Factor by the total area of that plant water need category

Plant Factor	Multiply	Total Hydrozone Area	Equals	PF x HA
High (0.8)	x		=	
Medium (0.5)	x		=	
Low (0.3)	x		=	
Very Low (0.1)	x		=	

Step two: Add up the Total Adjusted Hydrozone Allowances

High PF x HA	Plus	Medium PF x HA	Plus	Low PF x HA	Plus	Very Low PF x HA	Equals	Total PF x HA
	+		+		+		=	

Step three: Divide the Total Adjusted Hydrozone Allowance by 0.71, minimum Irrigation Efficiency

Total PF x HA	Divided by	Irrigation Efficiency	Equals	Total PF x HA / 0.71
	/	0.71	=	

Step four: Add the SLA Area to the total (PF x HA / 0.71)

Total PF x HA / 0.71	Plus	Total Special Landscape Area	Equals	Total PF x HA / 0.71 + SLA
	+		=	

Step five: Multiply the yearly ETo times the Conversion Factor times the total (PF x HA / 0.71 + SLA)

Yearly ETo	Multiple	Conversion Factor	Multiple	PF x HA / 0.71 + SLA	Equals	**ETWU** (must be equal to or lower than the MAWA)
	x	0.62	x		=	

Record Project's square footage, by station number, on the Hydrozone Table, under the correct category. Use WUCOLS to determine the correct hydrozone category for the plants watered by each irrigation valve. Use the highest water needing plant irrigated by a valve to set that valve's water need category.

Hydrozone Table

Station Number	High Water Needs (sq. Ft.)	Medium Water Needs (Sq. Ft.)	Low Water Needs (Sq. Ft.)	Very Low Water Needs (Sq. Ft.)	Special Landscape Area (Sq. Ft.)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
Totals					