MEMO

TO: Sustainability Commission

FROM: Kathy Kleinbaum, Senior Management Analyst

DATE: August 14 2014

SUBJECT: LANDSCAPE WATER EFFICIENCY ORDINANCE

BACKGROUND

In 2006, the State adopted the Water Conservation in Landscaping Act (Assembly Bill 1881) which governed water use in landscapes for new developments or rehabilitated landscapes over certain size thresholds. Per AB 1881, cities were required to adopt either the State Department of Water Resources (DWR) model ordinance by January 1, 2010 or had the option to adopt one of their own of equal or greater effectiveness. AB 1881 provided that, if a local entity had not adopted either the State DWR model ordinance or an alternative ordinance by January 1, 2010, the DWR model ordinance automatically became effective in that jurisdiction. Accordingly, since January 1, 2010, the City has been enforcing the DWR model ordinance although the existing Zoning Code (Chapter 27.71 Landscape) has not been updated to reflect these requirements.

There are two alternative model ordinances that meet the requirements of AB 1881 that have been adopted by most jurisdictions: the State DWR model ordinance or the model ordinance developed by the Bay Area Water Conservation Agency (BAWSCA). This report summarizes the differences between these ordinances and the history of prior review and discussion by the City.

<u>Comparison of the DWR and BAWSCA Model Ordinances</u>

A detailed table comparing the key provisions of both the DWR and the BAWSCA model ordinances is included as **Attachment 1** to this report. In general, the BAWSCA model is considered to be more streamlined in terms of required submittals but applies to more properties than the DWR ordinance. The DWR model ordinance is included as **Attachment 2** and the BAWSCA model ordinance is **Attachment 3** to this report.

Both model ordinances apply to new construction and/or to rehabilitated landscapes that require a permit. Homeowners who are remodeling their properties, including those doing significant additions, are not impacted unless they completely redo their landscaping and have landscapes that exceed the minimum size thresholds. The DWR ordinance applies to landscape areas that are 2,500 square feet or greater for developer-built projects and 5,000 square feet or greater for home-owner provided landscapes while the BAWSCA ordinance applies to all

landscape areas that are 1,000 square feet or greater in order to maximize water conservation on as many properties as possible.

The new CalGreen Building Code, which went into effect January 1, 2014, contains provisions which override both of the model ordinances. The two primary provisions are that automatic irrigation systems with moisture sensors are now required for all new landscapes and separate water meters are required for all new non-residential landscapes of over 1,000 square feet.

The DWR model ordinance provides flexibility to meet the water conservation requirements through the preparation of a water budget. However, the DWR ordinance requires a significant amount of documentation both upon approval and certification that must be prepared by a licensed landscape contractor or architect. The ordinance recommends dedicated water meters but does not require them.

The BAWSCA ordinance gives the applicant the choice of either going with a prescriptive menu of plant options or preparing a water budget and having flexibility on plant choices. The prescriptive plant option limits turf grass to only 25% of the landscaped area and requires 80% of the non-turf area to be drought-tolerant plants. This is fairly consistent with the City's existing Zoning Code in Chapter 27.71.120 (included as **Attachment 4**) which also limits the turf area to no more than 25% of the landscaped area for landscapes over 1,000 square feet and requires 90% of the remaining plants to be drought tolerant. However, a key difference is how the size of the landscaped area is defined. The BAWSCA definition excludes deck and patio areas whereas the City's definition includes them, which effectively increases the amount of allowable turf.

If the prescriptive plant option is selected under the BAWSCA ordinance, a simple check-list and the landscape and irrigation plans are the only required submittals. If the prescriptive option is not selected, the applicant must prepare a water budget calculation. This allows some flexibility to exceed the limit on turf area. For landscape areas between 1,000 and 2,500 square feet (defined as Tier 1 in the ordinance), submittals do not need to be prepared by a licensed landscape contractor or architect. Dedicated water meters are required for landscape areas over 5,000 square feet.

Several of the jurisdictions that chose to adopt the BAWSCA model ordinance, increased the minimum size threshold of landscape areas the ordinance applied to in order to reduce the number of single-family properties that would be impacted. Burlingame increased the size threshold to 1,500 square feet and Hillsborough and Menlo Park increased it to 2,500 square feet. A list of the selected ordinance for each of the cities in San Mateo County is shown in **Attachment 5**. A few cities did develop unique ordinances but for the most part, these were consistent with the DWR model but had unique language to better integrate with the existing zoning code in these jurisdictions.

Summary of Prior Review by City

Staff from the Community Development Department presented the City Council with the DWR model ordinance and the BAWSCA alternative model ordinance for consideration at the November 1, 2010 Study Session. The City Council directed staff to do some outreach to homeowners and gardening and landscape associations prior to developing a draft ordinance. Staff provided an update on outreach efforts at the September 9, 2011 City Council meeting. The Association of Professional Landscape Designers preferred the BAWSCA model ordinance because of the ease of the checklist option. The other stakeholders did not have specific preferences for one ordinance over the other.

The City Council provided direction that staff should consider moving forward with a modified version of the BAWSCA ordinance to allow for ease of implementation but staff should be mindful of not creating undue burden on single family property owners. Staff developed a draft ordinance, modeled after the City of Mountain View's adopted ordinance and presented it to the Planning Commission for review at their July 24, 2012 meeting. The City of Mountain View's ordinance is identical to BAWSCA model, including the fact that it applies to landscape areas of 1,000 square feet or greater, but it is more strict than the BAWSCA model in that it requires separate water meters for all landscape areas over 2,500 square feet.

The Planning Commission requested that the item be deferred until after they could hold a discussion with Cal Water and get their input on the proposed ordinance. Cal Water presented to the Planning Commission on October 23, 2012. Cal Water's only concern related to requirements for separate landscape water meters since they can be a significant expense for homeowners. Due to limited staff availability and other work program priorities, the Landscape Water Efficiency Ordinance was not brought back to the Planning Commission or City Council for consideration following this meeting.

Implementation to date

In order to comply with the State law, Planning staff has been implementing the DWR model ordinance for the past four years and have not had any difficulties in obtaining compliance from project applicants. Most developers and their landscape architects have experience in working with the ordinance in other jurisdictions and therefore are familiar with the required documentation.

To date, there have not been any single family homes that have been subject to the ordinance since the threshold area for landscape areas under the DWR ordinance is fairly large. In general, there are very few new single family homes built each year outside of larger developments. Over the past three years, only six homeowners applications for new home construction were approved which is an average of only two applications per year. None of these properties had landscape areas large enough to fall under the DWR ordinance threshold.

Staff contacted BAWSCA to see if there have been any jurisdictions that previously adopted the DWR model in 2010 and have since decided to go with the BAWSCA model. To their knowledge,

there have not been any cities that have made the switch. Additionally, they were not aware of any implementation difficulties with either version of the ordinance.

Staff also contacted Cal Water to see if there concerns have changed or if they have any additional concerns. Cal Water stated that their concerns remain the same.

Policy Options for Consideration

The key policy considerations that the Sustainability Commission should provide direction on include:

- Should the City continue using the DWR model ordinance and formally adopt it and incorporate it in the Municipal Code or should the BAWSCA alternative be considered?
- If the BAWSCA alternative is selected, should the City amend the minimum size threshold for landscape areas that the ordinance applies to?
- Are there other adjustments to the ordinance that should be considered, such as requirement for dedicated water meters for residential properties?

Next Steps

Based on the policy direction provided by the Commission, staff will draft an ordinance for consideration. The ordinance would amend Chapter 27.71 of the City's Municipal Code, which is part of the Zoning Code. As a result, the Planning Commission will need to review all recommended changes prior to them being brought forward to City Council for approval.

ACTION REQUIRED

The Commission should recommend the policy framework for an ordinance on Landscape Water Efficiency which will be forwarded to the Planning Commission and City Council for review.

ATTACHMENTS

Attachment 1 – Comparison of Main Differences between the Model Water Efficient Landscape Ordinances
Attachment 2 – DWR Model Ordinance
Attachment 3 – BAWSCA Model Ordinance
Attachment 4 – Municipal Code Chapter 27.71 Landscape
Attachment 5 – Adopted Water Efficiency Ordinances by San Mateo County Cities

Attachment 1

Comparison of Main Differences Between the Model Landscape Water Efficiency Ordinances

Department of Water Resources (DWR)	Bay Area Water Supply & Conservation Agency (BAWSCA)
Applies to outdoor landscapes where a planning application or building permit is required as follows: • New **developer-provided** landscapes for both public and private development of 2,500 sqft or more. • New **homeowner-provided** landscapes 5,000 sq. ft. or more	Applies to outdoor landscapes where a planning application or building permit is required as follows: • **Tier 1** requirements for landscape areas between 1,000 sqft and 2,500 sqft • **Tier 2** requirements for landscape areas over 2,500 sqft
Key elements: • Landscaping must meet water budget requirements • Dedicated water meters required for non-residential landscapes over 5,000 sqft • All submittals require a licensed landscape contractor or architect	**Key elements:** • Landscaping can either follow plant restrictions (Turf area limited to 25%; 80% of non-turf plants shall be drought tolerant) **or** Landscaping must stay within water budget requirements • Dedicated water meters required for all landscapes over 5,000 sqft • Irrigation hours for **Tier 2** landscapes limited to between 8pm and 10am • Submittals for **Tier 1** landscapes do not require a licensed landscape contractor or architect
Required Submittals • Specified project information • Water Efficiency Landscape Worksheet (includes Water Budget Calculation) • Soil Management Report • Landscape Design Plan • Irrigation Design Plan • Grading Design Plan	**Required Submittals** • Outdoor Water Use Efficiency Checklist **or** Water Budget Calculation • Landscape Design Plan • Irrigation Design Plan
Certifying Completion: Required submittal: • Project information sheet • Letter from designer certifying completion • Irrigation scheduling parameters • Landscape and irrigation maintenance schedule • Irrigation audit • Soils analysis	**Certifying Completion:** • Irrigation Audit required

ATTACHMENT 2

Model Water Efficient Landscape Ordinance
September 10, 2009

Index

California Code of Regulations
Title 23. Waters
Division 2. Department of Water Resources
Chapter 2.7. Model Water Efficient Landscape Ordinance

§ 490. Purpose.

(a) The State Legislature has found:

(1) that the waters of the state are of limited supply and are subject to ever increasing demands;

(2) that the continuation of California's economic prosperity is dependent on the availability of adequate supplies of water for future uses;

(3) that it is the policy of the State to promote the conservation and efficient use of water and to prevent the waste of this valuable resource;

(4) that landscapes are essential to the quality of life in California by providing areas for active and passive recreation and as an enhancement to the environment by cleaning air and water, preventing erosion, offering fire protection, and replacing ecosystems lost to development; and

(5) that landscape design, installation, maintenance and management can and should be water efficient; and

(6) that Section 2 of Article X of the California Constitution specifies that the right to use water is limited to the amount reasonably required for the beneficial use to be served and the right does not and shall not extend to waste or unreasonable method of use.

(b) Consistent with these legislative findings, the purpose of this model ordinance is to:

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

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

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

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

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

(6) encourage local agencies and water purveyors to use economic incentives that promote the efficient use of water, such as implementing a tiered-rate structure; and

(7) encourage local agencies to designate the necessary authority that implements and enforces the provisions of the Model Water Efficient Landscape Ordinance or its local landscape ordinance.

Note: Authority cited: Section 65593, Government Code. Reference: Sections 65591, 65593, 65596, Government Code.

§ 490.1 Applicability

(a) After January 1, 2010, this ordinance shall apply to all of the following landscape projects:

(1) new construction and rehabilitated landscapes for public agency projects and private development projects with a landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check or design review;

(2) new construction and rehabilitated landscapes which are developer-installed in single-family and multi-family projects with a landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check, or design review;

(3) new construction landscapes which are homeowner-provided and/or homeowner-hired in single-family and multi-family residential projects with a total project landscape area equal to or greater than 5,000 square feet requiring a building or landscape permit, plan check or design review;
(4) existing landscapes limited to Sections 493, 493.1 and 493.2; and
(5) cemeteries. Recognizing the special landscape management needs of cemeteries, new and rehabilitated cemeteries are limited to Sections 492.4, 492.11 and 492.12; and existing cemeteries are limited to Sections 493, 493.1 and 493.2.
(b) This ordinance does not apply to:
(1) registered local, state or federal historical sites;
(2) ecological restoration projects that do not require a permanent irrigation system;
(3) mined-land reclamation projects that do not require a permanent irrigation system; or
(4) plant collections, as part of botanical gardens and arboretums open to the public.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 491. Definitions.
The terms used in this ordinance have the meaning set forth below:
(a) "applied water" means the portion of water supplied by the irrigation system to the landscape.
(b) "automatic irrigation controller" means an automatic timing device used to remotely control valves that operate an irrigation system. Automatic irrigation controllers schedule irrigation events using either evapotranspiration (weather-based) or soil moisture data.
(c) "backflow prevention device" means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.
(d) "Certificate of Completion" means the document required under Section 492.9.
(e) "certified irrigation designer" means a person certified to design irrigation systems by an accredited academic institution a professional trade organization or other program such as the US Environmental Protection Agency's WaterSense irrigation designer certification program and Irrigation Association's Certified Irrigation Designer program.
(f) "certified landscape irrigation auditor" means a person certified to perform landscape irrigation audits by an accredited academic institution, a professional trade organization or other program such as the US Environmental Protection Agency's WaterSense irrigation auditor certification program and Irrigation Association's Certified Landscape Irrigation Auditor program.
(g) "check valve" or "anti-drain valve" means a valve located under a sprinkler head, or other location in the irrigation system, to hold water in the system to prevent drainage from sprinkler heads when the sprinkler is off.
(h) "common interest developments" means community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1351.
(i) "conversion factor (0.62)" means the number that converts acre-inches per acre per year to gallons per square foot per year
(j) "drip irrigation" means any non-spray low volume irrigation system utilizing emission devices with a flow rate measured in gallons per hour. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.
(k) "ecological restoration project" means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.
(l)"effective precipitation" or "usable rainfall" (Eppt) means the portion of total precipitation which becomes available for plant growth.
(m) "emitter" means a drip irrigation emission device that delivers water slowly from the system to the soil.
(n) "established landscape" means the point at which plants in the landscape have developed significant root growth into the soil. Typically, most plants are established after one or two years of growth.

(o) “establishment period of the plants” means the first year after installing the plant in the landscape or the first two years if irrigation will be terminated after establishment. Typically, most plants are established after one or two years of growth.
(p) “Estimated Total Water Use” (ETWU) means the total water used for the landscape as described in Section 492.4.
(q) “ET adjustment factor” (ETAF) means a factor of 0.7, 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.
A combined plant mix with a site-wide average of 0.5 is the basis of the plant factor portion of this calculation. For purposes of the ETAF, the average irrigation efficiency is 0.71. Therefore, the ET Adjustment Factor is (0.7)=(0.5/0.71). ETAF for a Special Landscape Area shall not exceed 1.0. ETAF for existing non-rehabilitated landscapes is 0.8.
(r) “evapotranspiration rate” means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time.
(s) “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.
(t) “hardscapes” means any durable material (pervious and non-pervious).
(u) “homeowner-provided landscaping” means any landscaping either installed by a private individual for a single family residence or installed by a licensed contractor hired by a homeowner. A homeowner, for purposes of this ordinance, is a person who occupies the dwelling he or she owns. This excludes speculative homes, which are not owner-occupied dwellings.
(v) “hydrozone” means a portion of the landscaped area having plants with similar water needs. A hydrozone may be irrigated or non-irrigated.
(w) “infiltration rate” means the rate of water entry into the soil expressed as a depth of water per unit of time (e.g., inches per hour).
(x)“invasive plant species” means species of plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources. Invasive species may be regulated by county agricultural agencies as noxious species. “Noxious weeds” means any weed designated by the Weed Control Regulations in the Weed Control Act and identified on a Regional District noxious weed control list. Lists of invasive plants are maintained at the California Invasive Plant Inventory and USDA invasive and noxious weeds database.
(y) “irrigation audit” means an in-depth evaluation of the performance of an irrigation system conducted by a Certified Landscape Irrigation Auditor. An irrigation audit includes, but is not limited to: inspection, system tune-up, system test with distribution uniformity or emission uniformity, reporting overspray or runoff that causes overland flow, and preparation of an irrigation schedule.
(z) “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 minimum average irrigation efficiency for purposes of this ordinance is 0.71. Greater irrigation efficiency can be expected from well designed and maintained systems.
(aa) “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 written recommendations to improve performance of the irrigation system.
(bb) “irrigation water use analysis” means an analysis of water use data based on meter readings and billing data.
(cc) “landscape architect” means a person who holds a license to practice landscape architecture in the state of California Business and Professions Code, Section 5615.
(dd) “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, other pervious or non-pervious hardscapes, and other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation).
(ee) "landscape contractor" means a person licensed by the state of California to construct, maintain, repair, install, or subcontract the development of landscape systems.
(ff) "Landscape Documentation Package" means the documents required under Section 492.3.
(gg) "landscape project" means total area of landscape in a project as defined in "landscape area" for the purposes of this ordinance, meeting requirements under Section 490.1.
(hh) "lateral line" means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.
(ii) "local agency" means a city or county, including a charter city or charter county, that is responsible for adopting and implementing the ordinance. The local agency is also responsible for the enforcement of this ordinance, including but not limited to, approval of a permit and plan check or design review of a project.
(jj) "local water purveyor" means any entity, including a public agency, city, county, or private water company that provides retail water service.
(kk) "low volume irrigation" means the application of irrigation water at low pressure through a system of tubing or lateral lines and low-volume emitters such as drip, drip lines, and bubblers. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.
(ll) "main line" means the pressurized pipeline that delivers water from the water source to the valve or outlet.
(mm) "Maximum Applied Water Allowance" (MAWA) means the upper limit of annual applied water for the established landscaped area as specified in Section 492.4. It is based upon the area's reference evapotranspiration, the ET Adjustment Factor, and the size of the landscape area. The Estimated Total Water Use shall not exceed the Maximum Applied Water Allowance. Special Landscape Areas, including recreation areas, areas permanently and solely dedicated to edible plants such as orchards and vegetable gardens, and areas irrigated with recycled water are subject to the MAWA with an ETAF not to exceed 1.0.
(nn) "microclimate" means the climate of a small, specific area that may contrast with the climate of the overall landscape area due to factors such as wind, sun exposure, plant density, or proximity to reflective surfaces.
(oo) "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.
(pp) "mulch" means any organic material such as leaves, bark, straw, 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.
(qq) "new construction" means, for the purposes of this ordinance, a new building with a landscape or other new landscape, such as a park, playground, or greenbelt without an associated building.
(rr) "operating pressure" means the pressure at which the parts of an irrigation system are designed by the manufacturer to operate.
(ss) "overhead sprinkler irrigation systems" means systems that deliver water through the air (e.g., spray heads and rotors).
(tt) "overspray" means the irrigation water which is delivered beyond the target area.
(uu) "permit" means an authorizing document issued by local agencies for new construction or rehabilitated landscapes.
(vv) "pervious" means any surface or material that allows the passage of water through the material and into the underlying soil.
(ww) "plant factor" or "plant water use factor" is a factor , when multiplied by ETo, estimates the amount of water needed by plants. For purposes of this ordinance, 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 this ordinance are derived from the Department of Water Resources 2000 publication "Water Use Classification of Landscape Species".
(xx) "precipitation rate" means the rate of application of water measured in inches per hour.
(yy) "project applicant" means the individual or entity submitting a Landscape Documentation Package required under Section 492.3, to request a permit, plan check, or design review from the local agency. A project applicant may be the property owner or his or her designee.
(zz) "rain sensor" or "rain sensing shutoff device" means a component which automatically suspends an irrigation event when it rains.
(aaa) "record drawing" or "as-builts" means a set of reproducible drawings which show significant changes in the work made during construction and which are usually based on drawings marked up in the field and other data furnished by the contractor.
(bbb) "recreational area" means areas dedicated to active play such as parks, sports fields, and golf courses where turf provides a playing surface.
(ccc) "recycled water", "reclaimed water", or "treated sewage effluent 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.
(ddd) "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 Section 495.1, 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 of determining the Maximum Applied Water Allowance so that regional differences in climate can be accommodated.
(eee) "rehabilitated landscape" means any re-landscaping project that requires a permit , plan check, or design review, meets the requirements of Section 490.1, and the modified landscape area is equal to or greater than 2,500 square feet, is 50% of the total landscape area, and the modifications are completed within one year.
(fff) "runoff" means water which is not absorbed by the soil or landscape to which it is applied and flows from the landscape 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.
(ggg) "soil moisture sensing device" or "soil moisture sensor" means a device that measures the amount of water in the soil. The device may also suspend or initiate an irrigation event.
(hhh) "soil texture" means the classification of soil based on its percentage of sand, silt, and clay.
(iii)"Special Landscape Area" (SLA) means 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, golf courses, and where turf provides a playing surface.
(jjj) "sprinkler head" means a device which delivers water through a nozzle.
(kkk) "static water pressure" means the pipeline or municipal water supply pressure when water is not flowing.
(lll) "station" means an area served by one valve or by a set of valves that operate simultaneously.
(mmm) "swing joint" means an irrigation component that provides a flexible, leak-free connection between the emission device and lateral pipeline to allow movement in any direction and to prevent equipment damage.
(nnn) "turf" means a ground cover surface of mowed grass. Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and Tall fescue are cool-season grasses. Bermudagrass, Kikuyugrass, Seashore Paspalum, St. Augustinegrass, Zoysiagrass, and Buffalo grass are warm-season grasses.
(ooo) "valve" means a device used to control the flow of water in the irrigation system.
(ppp) "water conserving plant species" means a plant species identified as having a low plant factor.
(qqq) "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 landscape area. Constructed wetlands used for on-site wastewater treatment 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.
(rrr) "watering window" means the time of day irrigation is allowed.
(sss) "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.

Note: Authority Cited: Section 65595, Government Code. Reference: Sections 65592, 65596, Government Code.

§ 492. Provisions for New Construction or Rehabilitated Landscapes.
(a) A local agency may designate another agency, such as a water purveyor, to implement some or all of the requirements contained in this ordinance. Local agencies may collaborate with water purveyors to define each entity's specific responsibilities relating to this ordinance.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.1 Compliance with Landscape Documentation Package.
(a) Prior to construction, the local agency shall:
(1) provide the project applicant with the ordinance and procedures for permits, plan checks, or design reviews;
(2) review the Landscape Documentation Package submitted by the project applicant;
(3) approve or deny the Landscape Documentation Package;
(4) issue a permit or approve the plan check or design review for the project applicant; and
(5) upon approval of the Landscape Documentation Package, submit a copy of the Water Efficient Landscape Worksheet to the local water purveyor.
(b) Prior to construction, the project applicant shall:
(1) submit a Landscape Documentation Package to the local agency.
(c) Upon approval of the Landscape Documentation Package by the local agency, the project applicant shall:
(1) receive a permit or approval of the plan check or design review and record the date of the permit in the Certificate of Completion;
(2) submit a copy of the approved Landscape Documentation Package along with the record drawings, and any other information to the property owner or his/her designee; and
(3) submit a copy of the Water Efficient Landscape Worksheet to the local water purveyor.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.2 Penalties.
(a) A local agency may establish and administer penalties to the project applicant for non-compliance with the ordinance to the extent permitted by law.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.3 Elements of the Landscape Documentation Package.

(a) The Landscape Documentation Package shall include the following six (6) elements:

(1) project information;

(A) date

(B) project applicant

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

(D) total landscape area (square feet)

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

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

(G) checklist of all documents in Landscape Documentation Package

(H) project contacts to include contact information for the project applicant and property owner

(I) applicant signature and date with statement, "I agree to comply with the requirements of the water efficient landscape ordinance and submit a complete Landscape Documentation Package".

(2) Water Efficient Landscape Worksheet;

(A) hydrozone information table

(B) water budget calculations

1. Maximum Applied Water Allowance (MAWA)

2. Estimated Total Water Use (ETWU)

(3) soil management report;

(4) landscape design plan;

(5) irrigation design plan; and

(6) grading design plan.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.4 Water Efficient Landscape Worksheet.

(a) A project applicant shall complete the Water Efficient Landscape Worksheet which contains two sections (see sample worksheet in Appendix B):

(1) a hydrozone information table (see Appendix B, Section A) for the landscape project; and

(2) a water budget calculation (see Appendix B, Section B) for the landscape project. For the calculation of the Maximum Applied Water Allowance and Estimated Total Water Use, a project applicant shall use the ETo values from the Reference Evapotranspiration Table in Appendix A. For geographic areas not covered in Appendix A, use data from other cities located nearby in the same reference evapotranspiration zone, as found in the CIMIS Reference Evapotranspiration Zones Map, Department of Water Resources, 1999.

(b) Water budget calculations shall adhere to the following requirements:

(1) The plant factor used shall be from WUCOLS. The plant factor ranges from 0 to 0.3 for low water use plants, from 0.4 to 0.6 for moderate water use plants, and from 0.7 to 1.0 for high water use plants.

(2) All water features shall be included in the high water use hydrozone and temporarily irrigated areas shall be included in the low water use hydrozone.

(3) All Special Landscape Areas shall be identified and their water use calculated as described below.

(4) ETAF for Special Landscape Areas shall not exceed 1.0.

(c) Maximum Applied Water Allowance

The Maximum Applied Water Allowance shall be calculated using the equation:

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

The example calculations below are hypothetical to demonstrate proper use of the equations and do not represent an existing and/or planned landscape project. The ETo values used in these calculations are from the Reference Evapotranspiration Table in Appendix A, for planning purposes only. For actual irrigation scheduling, automatic irrigation controllers are required and shall use current reference evapotranspiration data, such as from the California Irrigation Management Information System (CIMIS), other equivalent data, or soil moisture sensor data.

(1) Example MAWA calculation: a hypothetical landscape project in Fresno, CA with an irrigated landscape area of 50,000 square feet without any Special Landscape Area (SLA= 0, no edible plants, recreational areas, or use of recycled water). To calculate MAWA, the annual reference evapotranspiration value for Fresno is 51.1 inches as listed in the Reference Evapotranspiration Table in Appendix A.

MAWA = (ETo) (0.62) [(0.7 x LA) + (0.3 x SLA)]
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 for SLA
SLA = Special Landscape Area (square feet)
MAWA = (51.1 inches) (0.62) [(0.7 x 50,000 square feet) + (0.3 x 0)]
= 1,108,870 gallons per year
To convert from gallons per year to hundred-cubic-feet per year:
= 1,108,870/748 = 1,482 hundred-cubic-feet per year
(100 cubic feet = 748 gallons)

(2) In this next hypothetical example, the landscape project in Fresno, CA has the same ETo value of 51.1 inches and a total landscape area of 50,000 square feet. Within the 50,000 square foot project, there is now a 2,000 square foot area planted with edible plants. This 2,000 square foot area is considered to be a Special Landscape Area.

MAWA = (ETo) (0.62) [(0.7 x LA) + (0.3 x SLA)]
MAWA = (51.1 inches) (0.62) [(0.7 x 50,000 square feet) + (0.3 x 2,000 square feet)]
= 31.68 x [35,000 + 600] gallons per year
= 31.68 x 35,600 gallons per year
=1,127,808 gallons per year or 1,508 hundred-cubic-feet per year

(d) Estimated Total Water Use.

The Estimated Total Water Use shall be calculated using the equation below. The sum of the Estimated Total Water Use calculated for all hydrozones shall not exceed MAWA.

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

Where:

ETWU = Estimated Total Water Use per year (gallons)
ETo = Reference Evapotranspiration (inches)
PF = Plant Factor from WUCOLS (see Section 491)
HA = Hydrozone Area [high, medium, and low water use areas] (square feet)
SLA = Special Landscape Area (square feet)
0.62 = Conversion Factor
IE = Irrigation Efficiency (minimum 0.71)

(1) Example ETWU calculation: landscape area is 50,000 square feet; plant water use type, plant factor, and hydrozone area are shown in the table below. The ETo value is 51.1 inches per year. There are no Special Landscape Areas (recreational area, area permanently and solely dedicated to edible plants, and area irrigated with recycled water) in this example.

Hydrozone	Plant Water Use Type(s)	Plant Factor (PF)*	Hydrozone Area (HA) (square feet)	PF x HA (square feet)
1	High	0.8	7,000	5,600
2	High	0.7	10,000	7,000
3	Medium	0.5	16,000	8,000
4	Low	0.3	7,000	2,100
5	Low	0.2	10,000	2,000
			Sum	24,700

*Plant Factor from WUCOLS

$$ETWU = (51.1)(0.62)\left(\frac{24{,}700}{0.71} + 0\right)$$

= 1,102,116 gallons per year

Compare ETWU with MAWA: For this example MAWA = (51.1) (0.62) [(0.7 x 50,000) + (0.3 x 0)] = 1,108,870 gallons per year. The ETWU (1,102,116 gallons per year) is less than MAWA (1,108,870 gallons per year). In this example, the water budget complies with the MAWA.

(2) Example ETWU calculation: total landscape area is 50,000 square feet, 2,000 square feet of which is planted with edible plants. The edible plant area is considered a Special Landscape Area (SLA). The reference evapotranspiration value is 51.1 inches per year. The plant type, plant factor, and hydrozone area are shown in the table below.

Hydrozone	Plant Water Use Type(s)	Plant Factor (PF)*	Hydrozone Area (HA) (square feet)	PF x HA (square feet)
1	High	0.8	7,000	5,600
2	High	0.7	9,000	6,300
3	Medium	0.5	15,000	7,500
4	Low	0.3	7,000	2,100
5	Low	0.2	10,000	2,000
			Sum	23,500
6	SLA	1.0	2,000	2,000

*Plant Factor from WUCOLS

$$ETWU = (51.1)(0.62)\left(\frac{23{,}500}{0.71} + 2{,}000\right)$$

= (31.68) (33,099 + 2,000)

= 1,111,936 gallons per year

Compare ETWU with MAWA. For this example:
MAWA = (51.1) (0.62) [(0.7 x 50,000) + (0.3 x 2,000)]
= 31.68 x [35,000 + 600]
= 31.68 x 35,600
=1,127,808 gallons per year

The ETWU (1,111,936 gallons per year) is less than MAWA (1,127,808 gallons per year). For this example, the water budget complies with the MAWA.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.5 Soil Management Report.

(a) In order to reduce runoff and encourage healthy plant growth, a soil management report shall be completed by the project applicant, or his/her designee, as follows:
(1) Submit soil samples to a laboratory for analysis and recommendations.
(A) Soil sampling shall be conducted in accordance with laboratory protocol, including protocols regarding adequate sampling depth for the intended plants.
(B) The soil analysis may include:
1. soil texture;
2. infiltration rate determined by laboratory test or soil texture infiltration rate table;
3. pH;
4. total soluble salts;
5. sodium;
6. percent organic matter; and
7. recommendations.
(2) The project applicant, or his/her designee, shall comply with one of the following:
(A) If significant mass grading is not planned, the soil analysis report shall be submitted to the local agency as part of the Landscape Documentation Package; or
(B) If significant mass grading is planned, the soil analysis report shall be submitted to the local agency as part of the Certificate of Completion.
(3) The soil analysis report shall be made available, in a timely manner, to the professionals preparing the landscape design plans and irrigation design plans to make any necessary adjustments to the design plans.
(4) The project applicant, or his/her designee, shall submit documentation verifying implementation of soil analysis report recommendations to the local agency with Certificate of Completion.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.6 Landscape Design Plan.

(a) For the efficient use of water, a landscape shall be carefully designed and planned for the intended function of the project. A landscape design plan meeting the following design criteria shall be submitted as part of the Landscape Documentation Package.
(1) Plant Material
(A) Any plant may be selected for the landscape, providing the Estimated Total Water Use in the landscape area does not exceed the Maximum Applied Water Allowance. To encourage the efficient use of water, the following is highly recommended:
1. protection and preservation of native species and natural vegetation;
2. selection of water-conserving plant and turf species;

3. selection of plants based on disease and pest resistance;
4. selection of trees based on applicable local tree ordinances or tree shading guidelines; and
5. selection of plants from local and regional landscape program plant lists.
(B) Each hydrozone shall have plant materials with similar water use, with the exception of hydrozones with plants of mixed water use, as specified in Section 492.7(a)(2)(D).
(C) Plants shall be selected and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site. To encourage the efficient use of water, the following is highly recommended:
1. use the Sunset Western Climate Zone System which takes into account temperature, humidity, elevation, terrain, latitude, and varying degrees of continental and marine influence on local climate;
2. 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, power lines]; and
3. consider the solar orientation for plant placement to maximize summer shade and winter solar gain.
(D) Turf is not allowed on slopes greater than 25% where the toe of the slope is adjacent to an impermeable hardscape and where 25% means 1 foot of vertical elevation change for every 4 feet of horizontal length (rise divided by run x 100 = slope percent).
(E) A landscape design plan for projects in fire-prone areas shall address fire safety and prevention. A defensible space or zone around a building or structure is required per Public Resources Code Section 4291(a) and (b). Avoid fire-prone plant materials and highly flammable mulches.
(F) The use of invasive and/or noxious plant species is strongly discouraged.
(G) The architectural guidelines of a common interest development, which include community apartment projects, condominiums, planned developments, and stock cooperatives, shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group.
(2) Water Features
(A) Recirculating water systems shall be used for water features.
(B) Where available, recycled water shall be used as a source for decorative water features.
(C) Surface area of a water feature shall be included in the high water use hydrozone area of the water budget calculation.
(D) Pool and spa covers are highly recommended.
(3) Mulch and Amendments
(A) A minimum two inch (2″) layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated.
(B) Stabilizing mulching products shall be used on slopes.
(C) The mulching portion of the seed/mulch slurry in hydro-seeded applications shall meet the mulching requirement.
(D) Soil amendments shall be incorporated according to recommendations of the soil report and what is appropriate for the plants selected (see Section 492.5).
(b) The landscape design plan, at a minimum, shall:
(1) delineate and label each hydrozone by number, letter, or other method;
(2) identify each hydrozone as low, moderate, high water, or mixed water use. Temporarily irrigated areas of the landscape shall be included in the low water use hydrozone for the water budget calculation;
(3) identify recreational areas;
(4) identify areas permanently and solely dedicated to edible plants;
(5) identify areas irrigated with recycled water;
(6) identify type of mulch and application depth;
(7) identify soil amendments, type, and quantity;
(8) identify type and surface area of water features;
(9) identify hardscapes (pervious and non-pervious);

(10) identify location and installation details of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater. Stormwater best management practices are encouraged in the landscape design plan and examples include, but are not limited to:
(A) infiltration beds, swales, and basins that allow water to collect and soak into the ground;
(B) constructed wetlands and retention ponds that retain water, handle excess flow, and filter pollutants; and
(C) pervious or porous surfaces (e.g., permeable pavers or blocks, pervious or porous concrete, etc.) that minimize runoff.
(11) identify any applicable rain harvesting or catchment technologies (e.g., rain gardens, cisterns, etc.);
(12) contain the following statement: "I have complied with the criteria of the ordinance and applied them for the efficient use of water in the landscape design plan"; and
(13) bear the signature of a licensed landscape architect, licensed landscape contractor, or any other person authorized to design a landscape. (See Sections 5500.1, 5615, 5641, 5641.1, 5641.2, 5641.3, 5641.4, 5641.5, 5641.6, 6701, 7027.5 of the Business and Professions Code, Section 832.27 of Title16 of the California Code of Regulations, and Section 6721 of the Food and Agriculture Code.)

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code and Section 1351, Civil Code.

§ 492.7 Irrigation Design Plan.
(a) For the efficient use of water, an irrigation system shall meet all the requirements listed in this section and the manufacturers' 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 following design criteria shall be submitted as part of the Landscape Documentation Package.
(1) System
(A) Dedicated landscape water meters are highly recommended on landscape areas smaller than 5,000 square feet to facilitate water management.
(B) Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data shall be required for irrigation scheduling in all irrigation systems.
(C) The irrigation system shall be designed to ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.
1. If the static pressure is above or below the required dynamic pressure of the irrigation system, pressure-regulating devices such as inline pressure regulators, booster pumps, or other devices shall be installed to meet the required dynamic pressure of the irrigation system.
2. Static water pressure, dynamic or operating pressure. and flow reading of the water supply shall be measured at the point of connection. These pressure and flow measurements shall be conducted at the design stage. If the measurements are not available at the design stage, the measurements shall be conducted at installation.
(D) Sensors (rain, freeze, wind, etc.), either integral or auxiliary, that suspend or alter irrigation operation during unfavorable weather conditions shall be required on all irrigation systems, as appropriate for local climatic conditions. Irrigation should be avoided during windy or freezing weather or during rain.
(E) Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) shall be required, as close as possible to the point of connection of the water supply, to minimize water loss in case of an emergency (such as a main line break) or routine repair.

(F) Backflow prevention devices shall be required to protect the water supply from contamination by the irrigation system. A project applicant shall refer to the applicable local agency code (i.e., public health) for additional backflow prevention requirements.
(G) High flow sensors that detect and report high flow conditions created by system damage or malfunction are recommended.
(H) The irrigation system shall be designed to prevent 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, roadways, or structures.
(I) Relevant information from the soil management plan, such as soil type and infiltration rate, shall be utilized when designing irrigation systems.
(J) The design of the irrigation system shall conform to the hydrozones of the landscape design plan.
(K) The irrigation system must be designed and installed to meet, at a minimum, the irrigation efficiency criteria as described in Section 492.4 regarding the Maximum Applied Water Allowance.
(L) It is highly recommended that the project applicant or local agency inquire with the local water purveyor about peak water operating demands (on the water supply system) or water restrictions that may impact the effectiveness of the irrigation system.
(M) In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.
(N) Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.
(O) Head to head coverage is recommended. However, sprinkler spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.
(P) Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to high traffic areas.
(Q) Check valves or anti-drain valves are required for all irrigation systems.
(R) Narrow or irregularly shaped areas, including turf, less than eight (8) feet in width in any direction shall be irrigated with subsurface irrigation or low volume irrigation system.
(S) Overhead irrigation shall not be permitted within 24 inches of any non-permeable surface. Allowable irrigation within the setback from non-permeable surfaces may include drip, drip line, or other low flow non-spray technology. The setback area may be planted or unplanted. The surfacing of the setback may be mulch, gravel, or other porous material. These restrictions may be modified if:
1. the landscape area is adjacent to permeable surfacing and no runoff occurs; or
2. the adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping; or
3. the irrigation designer specifies an alternative design or technology, as part of the Landscape Documentation Package and clearly demonstrates strict adherence to irrigation system design criteria in Section 492.7 (a)(1)(H). Prevention of overspray and runoff must be confirmed during the irrigation audit.
(T) Slopes greater than 25% shall not be irrigated with an irrigation system with a precipitation rate exceeding 0.75 inches per hour. This restriction may be modified if the landscape designer specifies an alternative design or technology, as part of the Landscape Documentation Package, and clearly demonstrates no runoff or erosion will occur. Prevention of runoff and erosion must be confirmed during the irrigation audit.
(2) Hydrozone
(A) Each valve shall irrigate a hydrozone with similar site, slope, sun exposure, soil conditions, and plant materials with similar water use.
(B) Sprinkler heads and other emission devices shall be selected based on what is appropriate for the plant type within that hydrozone.
(C) Where feasible, trees shall be placed on separate valves from shrubs, groundcovers, and turf.
(D) Individual hydrozones that mix plants of moderate and low water use, or moderate and high water use, may be allowed if:

1. plant factor calculation is based on the proportions of the respective plant water uses and their plant factor; or
2. the plant factor of the higher water using plant is used for calculations.
(E) Individual hydrozones that mix high and low water use plants shall not be permitted.
(F) On the landscape design plan and irrigation design plan, hydrozone areas shall be designated by number, letter, or other designation. On the irrigation design plan, designate the areas irrigated by each valve, and assign a number to each valve. Use this valve number in the Hydrozone Information Table (see Appendix B Section A). This table can also assist with the irrigation audit and programming the controller.
(b) The irrigation design plan, at a minimum, shall contain:
(1) location and size of separate water meters for landscape;
(2) 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, pressure regulators, and backflow prevention devices;
(3) static water pressure at the point of connection to the public water supply;
(4) flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (pressure per square inch) for each station;
(5) recycled water irrigation systems as specified in Section 492.14;
(6) the following statement: "I have complied with the criteria of the ordinance and applied them accordingly for the efficient use of water in the irrigation design plan"; and
(7) the signature of a licensed landscape architect, certified irrigation designer, licensed landscape contractor, or any other person authorized to design an irrigation system. (See Sections 5500.1, 5615, 5641, 5641.1, 5641.2, 5641.3, 5641.4, 5641.5, 5641.6, 6701, 7027.5 of the Business and Professions Code, Section 832.27 of Title 16 of the California Code of Regulations, and Section 6721 of the Food and Agricultural Code.)

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.8 Grading Design Plan.
(a) For the efficient use of water, grading of a project site shall be designed to minimize soil erosion, runoff, and water waste. A grading plan shall be submitted as part of the Landscape Documentation Package. A comprehensive grading plan prepared by a civil engineer for other local agency permits satisfies this requirement.
(1) The project applicant shall submit a landscape grading plan that indicates finished configurations and elevations of the landscape area including:
(A) height of graded slopes;
(B) drainage patterns;
(C) pad elevations;
(D) finish grade; and
(E) stormwater retention improvements, if applicable.
(2) To prevent excessive erosion and runoff, it is highly recommended that project applicants:
(A) grade so that all irrigation and normal rainfall remains within property lines and does not drain on to non-permeable hardscapes;
(B) avoid disruption of natural drainage patterns and undisturbed soil; and
(C) avoid soil compaction in landscape areas.
(3) The grading design plan shall contain the following statement: "I have complied with the criteria of the ordinance and applied them accordingly for the efficient use of water in the grading design plan" and shall bear the signature of a licensed professional as authorized by law.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.9 Certificate of Completion.
(a) The Certificate of Completion (see Appendix C for a sample certificate) shall include the following six (6) elements:
(1) project information sheet that contains:
(A) date;
(B) project name;
(C) project applicant name, telephone, and mailing address;
(D) project address and location; and
(E) property owner name, telephone, and mailing address;
(2) certification by either the signer of the landscape design plan, the signer of the irrigation design plan, or the licensed landscape contractor that the landscape project has been installed per the approved Landscape Documentation Package;
(A) where there have been significant changes made in the field during construction, these "as-built" or record drawings shall be included with the certification;
(3) irrigation scheduling parameters used to set the controller (see Section 492.10);
(4) landscape and irrigation maintenance schedule (see Section 492.11);
(5) irrigation audit report (see Section 492.12); and
(6) soil analysis report, if not submitted with Landscape Documentation Package, and documentation verifying implementation of soil report recommendations (see Section 492.5).
(b) The project applicant shall:
(1) submit the signed Certificate of Completion to the local agency for review;
(2) ensure that copies of the approved Certificate of Completion are submitted to the local water purveyor and property owner or his or her designee.
(c) The local agency shall:
(1) receive the signed Certificate of Completion from the project applicant;
(2) approve or deny the Certificate of Completion. If the Certificate of Completion is denied, the local agency shall provide information to the project applicant regarding reapplication, appeal, or other assistance.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.10 Irrigation Scheduling.
(a) 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:
(1) Irrigation scheduling shall be regulated by automatic irrigation controllers.
(2) Overhead irrigation shall be scheduled between 8:00 p.m. and 10:00 a.m. unless weather conditions prevent it. If allowable hours of irrigation differ from the local water purveyor, the stricter of the two shall apply. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.
(3) For implementation of the irrigation schedule, particular attention must be paid to irrigation run times, emission device, flow rate, and current reference evapotranspiration, so that applied water meets the Estimated Total Water Use. Total annual applied water shall be less than or equal to Maximum Applied Water Allowance (MAWA). Actual irrigation schedules shall be regulated by automatic irrigation controllers using current reference evapotranspiration data (e.g., CIMIS) or soil moisture sensor data.
(4) Parameters used to set the automatic controller shall be developed and submitted for each of the following:
(A) the plant establishment period;

(B) the established landscape; and
(C) temporarily irrigated areas.
(5) Each irrigation schedule shall consider for each station all of the following that apply:
(A) irrigation interval (days between irrigation);
(B) irrigation run times (hours or minutes per irrigation event to avoid runoff);
(C) number of cycle starts required for each irrigation event to avoid runoff;
(D) amount of applied water scheduled to be applied on a monthly basis;
(E) application rate setting;
(F) root depth setting;
(G) plant type setting;
(H) soil type;
(I) slope factor setting;
(J) shade factor setting; and
(K) irrigation uniformity or efficiency setting.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.11 Landscape and Irrigation Maintenance Schedule.
(a) Landscapes shall be maintained to ensure water use efficiency. A regular maintenance schedule shall be submitted with the Certificate of Completion.
(b) A regular maintenance schedule shall include, but not be limited to, routine inspection; adjustment and repair of the irrigation system and its components; aerating and dethatching turf areas; replenishing mulch; fertilizing; pruning; weeding in all landscape areas, and removing and obstruction to emission devices. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.
(c) Repair of all irrigation equipment shall be done with the originally installed components or their equivalents.
(d) A project applicant is encouraged to implement sustainable or environmentally-friendly practices for overall landscape maintenance.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.12 Irrigation Audit, Irrigation Survey, and Irrigation Water Use Analysis.
(a) All landscape irrigation audits shall be conducted by a certified landscape irrigation auditor.
(b) For new construction and rehabilitated landscape projects installed after January 1, 2010, as described in Section 490.1:
(1) the project applicant shall submit an irrigation audit report with the Certificate of Completion to the local agency that may include, but is not limited to: inspection, system tune-up, system test with distribution uniformity, reporting overspray or run off that causes overland flow, and preparation of an irrigation schedule;
(2) the local agency shall administer programs that may include, but not be limited to, irrigation water use analysis, irrigation audits, and irrigation surveys for compliance with the Maximum Applied Water Allowance.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.13 Irrigation Efficiency.
(a) For the purpose of determining Maximum Applied Water Allowance, average irrigation efficiency is assumed to be 0.71. Irrigation systems shall be designed, maintained, and managed to meet or exceed an average landscape irrigation efficiency of 0.71.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.14 Recycled Water.
(a) The installation of recycled water irrigation systems shall allow for the current and future use of recycled water, unless a written exemption has been granted as described in Section 492.14(b).
(b) Irrigation systems and decorative water features shall use recycled water unless a written exemption has been granted by the local water purveyor stating that recycled water meeting all public health codes and standards is not available and will not be available for the foreseeable future.
(c) All recycled water irrigation systems shall be designed and operated in accordance with all applicable local and State laws.
(d) Landscapes using recycled water are considered Special Landscape Areas. The ET Adjustment Factor for Special Landscape Areas shall not exceed 1.0.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.15 Stormwater Management.
(a) Stormwater management practices minimize runoff and increase infiltration which recharges groundwater and improves water quality. Implementing stormwater best management practices into the landscape and grading design plans to minimize runoff and to increase on-site retention and infiltration are encouraged.
(b) Project applicants shall refer to the local agency or Regional Water Quality Control Board for information on any applicable stormwater ordinances and stormwater management plans.
(c) Rain gardens, cisterns, and other landscapes features and practices that increase rainwater capture and create opportunities for infiltration and/or onsite storage are recommended.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.16 Public Education.
(a) Publications. Education is a critical component to promote the efficient use of water in landscapes. The use of appropriate principles of design, installation, management and maintenance that save water is encouraged in the community.
(1) A local agency shall provide information to owners of new, single-family residential homes regarding the design, installation, management, and maintenance of water efficient landscapes.
(b) Model Homes. All model homes that are landscaped shall use signs and written information to demonstrate the principles of water efficient landscapes described in this ordinance.
(1) Signs shall be used to identify the model as an example of a water efficient landscape featuring elements such as hydrozones, irrigation equipment, and others that contribute to the overall water efficient theme.
(2) Information shall be provided about designing, installing, managing, and maintaining water efficient landscapes.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 492.17 Environmental Review.
(a) The local agency must comply with the California Environmental Quality Act (CEQA), as appropriate.

Note: Authority cited: Section 21082, Public Resources Code. Reference: Sections 21080, 21082, Public Resources Code.

§ 493. Provisions for Existing Landscapes.
(a) A local agency may designate another agency, such as a water purveyor, to implement some or all of the requirements contained in this ordinance. Local agencies may collaborate with water purveyors to define each entity's specific responsibilities relating to this ordinance.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 493.1 Irrigation Audit, Irrigation Survey, and Irrigation Water Use Analysis.
(a) This section, 493.1, shall apply to all existing landscapes that were installed before January 1, 2010 and are over one acre in size.
(1) For all landscapes in 493.1(a) that have a water meter, the local agency shall administer programs that may include, but not be limited to, irrigation water use analyses, irrigation surveys, and irrigation audits to evaluate water use and provide recommendations as necessary to reduce landscape water use to a level that does not exceed the Maximum Applied Water Allowance for existing landscapes. The Maximum Applied Water Allowance for existing landscapes shall be calculated as: MAWA = (0.8) (ETo)(LA)(0.62).
(2) For all landscapes in 493.1(a), that do not have a meter, the local agency shall administer programs that may include, but not be limited to, irrigation surveys and irrigation audits to evaluate water use and provide recommendations as necessary in order to prevent water waste.
(b) All landscape irrigation audits shall be conducted by a certified landscape irrigation auditor.

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

§ 493.2 Water Waste Prevention.
(a) Local agencies shall prevent water waste resulting from inefficient landscape irrigation by prohibiting runoff from leaving the target landscape due to low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, parking lots, or structures. Penalties for violation of these prohibitions shall be established locally.
(b) Restrictions regarding overspray and runoff may be modified if:
(1) the landscape area is adjacent to permeable surfacing and no runoff occurs; or
(2) the adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping.

Note: Authority cited: Section 65594, Government Code. Reference: Section 65596, Government Code.

§ 494. Effective Precipitation.
(a) A local agency may consider Effective Precipitation (25% of annual precipitation) in tracking water use and may use the following equation to calculate Maximum Applied Water Allowance:
MAWA= (ETo - Eppt) (0.62) [(0.7 x LA) + (0.3 x SLA)].

Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

ORDINANCE NO. _____

AN ORDINANCE OF [*insert name of GOVERNING BODY OF JURISDICTIONAL ENTITY*] ESTABLISHING WATER CONSERVATION IN LANDSCAPING REGULATIONS

THIS ORDINANCE is adopted in light of the following facts and circumstances, which are hereby found and declared by the [*Council/Board of Directors/Board of Supervisors*]:

WHEREAS, a reliable minimum supply of potable water is essential to the public health, safety and welfare of the people and economy of [*insert City or County name*, California].

WHEREAS, the California Water Conservation in Landscaping Act, also known as the State Landscape Model Ordinance ("Model Ordinance"), has been implemented by a Statewide Landscape Task Force which was overseen by the California Urban Water Conservation Council. The California Water Conservation in Landscaping Act was amended pursuant to AB 2717 (Chapter 682, Stats. 2004) and AB 1881 (Chapter 559, Stats. 2006).

WHEREAS, AB 1881 requires cities and counties, no later than January 1, 2010, to adopt the updated Model Ordinance or an equivalent document which is "at least as effective as" the Model Ordinance in conserving water. In the event cities and counties do not take such action, the State's Model Ordinance will be deemed to be automatically adopted by statute.

WHEREAS, the [*Entity's name*] has developed this local Water Conservation In Landscaping Ordinance to meet the requirements and guidelines of the Model Ordinance and to address the unique physical characteristics, including average landscaped areas, within [*Entity*]'s jurisdiction in order to ensure that this Ordinance will be "at least as effective as" the Model Ordinance in conserving water.

WHEREAS, although this Water Conservation in Landscaping Ordinance is more streamlined and simplified than the Model Ordinance, the [*Council/Board of Directors/Board of Supervisors*] finds that it is "at least as effective as" the Model Ordinance for the following reasons: (1) this Ordinance applies to more accounts than the Model Ordinance does because it lowers the size threshold for applicable landscapes from 2,500 square feet (or, in the case of single-family residences, from 5,000 square feet) to 1,000 square feet, to better reflect the typical landscaped areas located within this [*City/County/District*]'s boundaries; (2) this Ordinance includes a default turf restriction of 25% of the irrigated area and requires that at least 80% of the plants in non-turf landscape areas be native plants, low-water using plants, or no-water using plants (unless the applicant elects to perform a water budget); and (3) this Ordinance expands the requirement for dedicated irrigation meters to all accounts with landscaping greater than 5,000 square feet. The Model Ordinance does not contain any such default turf restrictions or specified plant requirements and only requires dedicated irrigation meters on non-residential accounts with landscaping greater than 5,000 square feet.

WHEREAS, although this Water Conservation in Landscaping Ordinance is more streamlined and simplified than the Model Ordinance, the [*Council/Board of Directors/Board of Supervisors*] further finds that it is "at least as effective as" the Model Ordinance because this Ordinance includes water budget parameters and values and landscape parameters that are consistent with the Model Ordinance. By using the same water budget parameters as the Model Ordinance (e.g., plant factors, irrigation efficiency), this Ordinance will be as effective as the

Model Ordinance in developing landscape water budgets. By using the same landscape parameters as the Model Ordinance for, among other things, slope restrictions and width restrictions for turf, irrigation times, and minimum mulch requirements, this Ordinance will be at least as effective as the Model Ordinance in achieving water savings.

WHEREAS, Article X, Section 2 of the California Constitution and Section 100 of the California Water Code declare that the general welfare requires water resources be put to beneficial use, waste or unreasonable use or unreasonable method of use of water be prevented, and conservation of water be fully exercised with a view to the reasonable and beneficial use thereof.

WHEREAS, the San Francisco Public Utilities Commission has imposed an interim water supply limitation on its wholesale customers, including local water suppliers, until at least 2018.

WHEREAS, current supply and demand projections for the Bay Area Water Supply and Conservation Agency ("BAWSCA") member agencies indicate that, in the absence of increased water conservation, water demands will exceed available water supplies in 2015 and implementation of water conserving ordinances is one mechanism by which agencies can reduce future water demands and remain within existing supplies.

WHEREAS, The [*City Council/Board of Directors/Board of Supervisors*] finds and determines that this Ordinance is consistent with the provisions requiring reductions in outdoor water use for landscaping in the California Green Building Standards Code, as such provisions will be implemented in the coming years. Such requirements include the development of a water budget for landscape irrigation in accordance with methodology outlined in either the Model Ordinance or pursuant to a locally adopted ordinance.

WHEREAS, the State Legislature has identified the provision of a more reliable water supply and the protection, restoration and enhancement of the Delta ecosystem as a high priority for the state. Pursuant to this, in November 2009, the State Legislature passed Senate Bill 7 (7th Extraordinary Session) requiring certain urban water suppliers to reduce per capita urban water use by 20% by the year 2020. Accordingly, the [City Council/Board of Directors/Board of Supervisors] finds that implementation of this Ordinance is consistent with the policies and goals established by the State Legislature in enacting SB 7 (7th Extraordinary Session).

WHEREAS, [For Cities and Counties only] Article XI, Section 7 of the California Constitution declares that a city or county may make and enforce within its limits all local, policy, sanitary, and other ordinances and regulations not in conflict with general laws.

WHEREAS, [For City/Counties who are not water purveyors] pursuant to AB 1881, enforcement of the landscape conservation ordinance adopted by [*Insert name of City/County*] will require supportive measures by [_____ *Water District*], the local water provider within these jurisdictions, so as to ensure the successful implementation and enforcement of this Ordinance.

WHEREAS, [For Water Districts] the District has the power to perform all acts necessary to carry out fully the provisions of the County Water District Law (Water Code Section 31001), may establish rules and regulations for the distribution and use of water supplies (Water Code Section 31024), may adopt and enforce a comprehensive water conservation program to reduce

potable water consumption and conserve supplies (Water Code Section 375), and may require as a condition of new service, that reasonable water-saving devices and water reclamation devices be installed to reduce water use (Water Code Section 31035).

WHEREAS, [For Water Districts] the Board of Directors of *[_____ Water District*] has a long-standing policy of engaging in and encouraging efficient water management measures and practices and desires to adopt this Ordinance in order to provide supportive measures to facilitate the enforcement of landscape conservation ordinances by [*the applicable City and/or County.*]

WHEREAS, [For Water Districts] the District has followed the procedures for notice, public participation and adoption set forth in Section 375 of the California Water Code.

WHEREAS, [for agencies with recycled water] the adoption of this Ordinance is separate and distinct from [*insert Entity's name*] adoption of a local ordinance relating to the use of recycled water in outdoor landscapes, as required pursuant to the Recycled Water in Landscaping Act, SB 2095 (Chapter 510, Stats. 2000).

WHEREAS, the [*City Council/Board of Directors/Board of Supervisors*] finds and determines that this Ordinance is not subject to the California Environmental Quality Act (Public Resources Code Section 2100 et seq.) ("CEQA") pursuant to Section 15307 (the activity assures the maintenance, restoration, enhancement, or protection of a natural resource) and Section 15378(b)(2) (the activity is not a project as it involves general policy and procedure making) of the State CEQA Guidelines, California Code of Regulations, Title 14, Chapter 3, since it makes and implements policies and procedures to ensure that water resources are conserved by reducing water consumption through the establishment of a structure for planning, designing, installing, maintaining and managing water-efficient landscapes.

WHEREAS, the adoption and enforcement of this Ordinance is necessary to manage the [*Entity*]'s potable water supply in the short and long-term and to avoid or minimize the effects of drought and shortage within the [*Entity*]. This Ordinance is essential to ensure a reliable and sustainable minimum supply of water for the public health, safety and welfare.

NOW, THEREFORE, THE [*COUNCIL/BOARD OF DIRECTORS/SUPERVISORS CITY/COUNTY OR DISTRICT*] DOES ORDAIN AS FOLLOWS:

I. Title

THIS ORDINANCE shall be known as the [*insert name of Entity*] Water Conservation in Landscaping Ordinance.

II. Applicability

A. The provisions of this Ordinance shall apply to all of the following landscape projects:

i. *Tier 1 Landscapes*: All new construction and rehabilitated landscapes with irrigated landscape areas between 1,000 square feet and 2,500

square feet requiring a building or landscape permit, plan check or design review, or requiring new or expanded water service.

ii. *Tier 2 Landscapes*: All new construction and rehabilitated landscapes with irrigated landscape areas equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check or design review or requiring new or expanded water service.

iii. Existing landscapes, including existing cemeteries, shall only be subject to the provisions for existing landscapes provided for in Section XIII "Provisions for Existing Landscapes Over One Acre in Size;" and

iv. New and rehabilitated cemeteries shall only be subject to the provisions of Section VIII "Water Budget Calculations", Section X "Landscape Audit Report", and Section XI "Landscape and Irrigation Maintenance Schedule."

B. The provisions of this Ordinance shall not apply to:

i. New construction and rehabilitated landscapes with irrigated landscape areas less than 1,000 square feet or that do not require a building or landscape permit, plan check or design review, or new or expanded water service;

ii. Landscapes, or portions of landscapes, that are only irrigated for an establishment period;

iii. Registered local, state or federal historical sites where landscaping establishes a historical landscape style, as determined by a public board or commission responsible for architectural review or historic preservation;

iv. Ecological restoration or mined-land reclamation projects that do not require a permanent irrigation system; or

v. Community gardens or plant collections, as part of botanical gardens and arboretums open to the public, agricultural uses, commercial nurseries and sod farms.

III. Definitions

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

B. "automatic irrigation controller" means an automatic timing device used to remotely control valves that operate an irrigation system. Automatic irrigation controllers schedule irrigation events using either evapotranspiration (weather-based) or soil moisture data.

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

D. “certified irrigation designer” means a person certified to design irrigation systems by an accredited academic institution a professional trade organization or other program such as the US Environmental Protection Agency’s WaterSense irrigation designer certification program and Irrigation Association’s Certified Irrigation Designer program.

E. “certified landscape irrigation auditor” means a person certified to perform landscape irrigation audits by an accredited academic institution, a professional trade organization or other program such as the US Environmental Protection Agency’s WaterSense irrigation auditor certification program and Irrigation Association’s Certified Landscape Irrigation Auditor program.

F. “certified professional” or “authorized professional” means a certified irrigation designer, a certified landscape irrigation auditor, a licensed landscape architect, a licensed landscape contractor, a licensed professional engineer, or any other person authorized by the state to design a landscape, an irrigation system, or authorized to complete a water budget.

G. “conversion factor (0.62)” means the number that converts acre-inches per acre per year to gallons per square foot per year

H. “drip irrigation” means any non-spray low volume irrigation system utilizing emission devices with a flow rate measured in gallons per hour. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

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

J. “effective precipitation” or “usable rainfall” (Eppt) means the portion of total precipitation which becomes available for plant growth.

K. “establishment period” means the first year after installing the plant in the landscape or the first two years if irrigation will be terminated after establishment. Typically, most plants are established after one or two years of growth.

L. “Estimated Total Water Use” (ETWU) means the total water used for the landscape as described in Section VIII “Water Budget Calculations.”

M. “ET adjustment factor” (ETAF) means a factor of 0.7, 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. ETAF for a Special Landscape Area shall not exceed 1.0. ETAF for existing non-rehabilitated landscapes shall not exceed 0.8.

N. “evapotranspiration rate” means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time.

O. “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.

P. “hardscapes” means any durable material (pervious and non-pervious).

Q. “hydrozone” means a portion of the landscaped area having plants with similar water needs. A hydrozone may be irrigated or non-irrigated.

R. “invasive plant species” means species of plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources. “Noxious weeds” means any weed designated by the Weed Control Regulations in the Weed Control Act and identified on a Regional District noxious weed control list. Lists of invasive plants are maintained at the California Invasive Plant Inventory and USDA invasive and noxious weeds database.

S. “irrigation audit” means an in-depth evaluation of the performance of an irrigation system. An irrigation audit includes, but is not limited to: inspection, system tune-up, system test with distribution uniformity or emission uniformity, reporting overspray or runoff that causes overland flow, and preparation of an irrigation schedule.

T. “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 minimum average irrigation efficiency for purposes of this Ordinance is 70%. Greater irrigation efficiency can be expected from well-designed and maintained systems.

U. “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 written recommendations to improve performance of the irrigation system.

V. “irrigation water use analysis” means an analysis of water use data based on meter readings and billing data.

W. “landscape architect” means a person who holds a license to practice landscape architecture in California as further defined by the California Business and Professions Code, Section 5615.

X. “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, other pervious or non-pervious hardscapes, other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation), agricultural uses, commercial nurseries and sod farms.

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

Z. “landscape project” means the total area comprising the landscape area, as defined in this Ordinance.

AA. “lateral line” means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.

BB. “local agency” means a city or county, including a charter city or charter county, or water district that is responsible for adopting and implementing this Ordinance. The local agency is also responsible for the enforcement of this Ordinance, including but not limited to, in the case of a city or county, approval of a permit and plan check or design review of a project; and in the case of a district, approval of a new or expanded water service application.

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

DD. “low volume irrigation” means the application of irrigation water at low pressure through a system of tubing or lateral lines and low-volume emitters such as drip, drip lines, and bubblers.

EE. "low water use plant" means a plant species whose water needs are compatible with local climate and soil conditions. Species classified as "very low water use" and "low water use" by *WUCOLS*, having a regionally adjusted *plant factor* of 0.0 through 0.3, shall be considered low water use plants.

FF. “Maximum Applied Water Allowance” (MAWA) means the upper limit of annual applied water for the established landscaped area as specified in Section VIII “Water Budget Calculations.”

GG. “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.

HH. “mulch” means any organic material such as leaves, bark, straw, 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.

II. “native plant” means a plant indigenous to a specific area of consideration. For the purposes of these guidelines, the term shall refer to plants indigenous to the coastal ranges of Central and Northern California, and more specifically to such plants that are suited to the ecology of the present or historic natural community(ies) of the project’s vicinity.

JJ. “new construction” means the construction of a new building or structure containing a landscape or other new land improvement, such as a park, playground, or greenbelt without an associated building.

KK. "no-water using plant" means a plant species with water needs that are compatible with local climate and soil conditions such that regular supplemental irrigation is not required to sustain the plant after it has become established.

LL. “operating pressure” means the pressure at which the parts of an irrigation system are designed by the manufacturer to operate.

MM. “overhead sprinkler irrigation systems” means systems that deliver water through the air (e.g., spray heads and rotors).

NN. “overspray” means the irrigation water which is delivered beyond the target area.

OO. “permit” means an authorizing document issued by local agencies for new construction or rehabilitated landscapes.

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

QQ. “plant factor” or “plant water use factor” is a factor, when multiplied by ETo, estimates the amount of water needed by plants.

RR. “precipitation rate” means the rate of application of water measured in inches per hour.

SS. “project applicant” means the individual or entity submitting a Project Landscape Application required under Section VI, to request a permit, plan check, or design review from the local agency or requesting new or expanded water service from the water district. A project applicant may be the property owner or his or her designee.

TT. “rain sensor” or “rain sensing shutoff device” means a component which automatically suspends an irrigation event when it rains.

UU. “recreational area” means areas dedicated to active play such as parks, sports fields, and golf courses where turf provides a playing surface.

VV. “reference evapotranspiration” or “ETo” means a standard measurement of environmental parameters which affect the water use of plants.

WW. “rehabilitated landscape” means any re-landscaping project that requires a permit, plan check, design review, or requires a new or expanded water service application.

XX. “runoff” means water which is not absorbed by the soil or landscape to which it is applied and flows from the landscape area.

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

ZZ. “Special Landscape Area” (SLA) means 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, golf courses, and where turf provides a playing surface.

AAA. “sprinkler head” means a device which delivers water through a nozzle.

BBB. “station” means an area served by one valve or by a set of valves that operate simultaneously.

CCC. “turf” means a ground cover surface of mowed grass. Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and Tall fescue are cool-season grasses. Bermuda grass, Kikuyu grass, Seashore Paspalum, St. Augustine grass, Zoysia grass, and Buffalo grass are warm-season grasses.

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

EEE. “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).

FFF. “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.

IV. Water Conservation in Landscaping Ordinance Requirements

A. All owners of new construction and rehabilitated landscapes of applicable sizes shall: (1) complete the Landscape Project Application (Section VI) and (2) comply with the Landscape and Irrigation Maintenance Schedule (Section XI) requirements of this Ordinance.

B. All owners of existing landscapes over one acre in size, even if installed before enactment of this Ordinance, shall: (1) comply with local agency programs that may be instituted relating to irrigation audits, surveys and water use analysis, and (2) shall maintain landscape irrigation facilities to prevent water waste and runoff.

V. Compliance with Ordinance.

A. The local agency shall:

i. Provide the project applicant with the Ordinance and Landscape Project Application requirements and the procedures for permits, plan checks, design reviews, or new or expanded water service;

ii. Review the Landscape Project Application submitted by the project applicant;

iii. Approve or deny the project applicant's Landscape Project Application submittal;

iv. Issue or approve a permit, plan check or design review that complies with the approved Landscape Project Application or approve a new or expanded water service application that complies with the approved Landscape Project Application;

v. Submit a copy of the complete Landscape Project Application to the local water purveyor or land use authority, as the case may be.

B. The project applicant shall:

i. Prior to construction, submit all portions of the Landscape Project Application, except the Landscape Audit Report, to the local agency; and

ii. After construction, submit the Landscape Audit Report portion of the Landscape Project Application to the local agency.

VI. Landscape Project Application

A. The elements of a landscape must be designed to achieve water efficiency and will comply with the criteria described in this Ordinance. In completing the Landscape Project Application, project applicants may choose one of two options to demonstrate that the landscape meets the Ordinance's water efficiency goals. Regardless of which option is selected, the applicant must complete and comply with all other elements of the Ordinance. The options include:

i. Planting restrictions:

a. The turf area may not be more than 25% of the landscape area [*or no more than _____ square feet*]; and

b. At least 80% of the plants in non-turf landscape areas shall be native plants, low-water using plants, or no-water using plants; or the

ii. Water Budget Calculation option (Section VIII).

B. The Landscape Project Application shall include the following elements:

i. Project Information;

ii. Outdoor Water Use Efficiency Checklist (Section VII);

iii. Water Budget Calculations, if applicant selects to use a water budget approach rather than comply with the turf area limitations or specified plant type restrictions (Section VIII);

iv. Landscape and Irrigation System Design Plans (Section IX); and

v. Landscape Audit Report (Section X).

VII. Outdoor Water Use Efficiency Checklist

[*Entity's name*] [has developed/will develop] an Outdoor Water Use Efficiency Checklist (Checklist), based on the criteria described below. For Tier 1 projects, either the project applicant or a certified or authorized professional shall complete the Checklist and submit it to [*Entity's name*] along with the Landscape and Irrigation Design Plan. For Tier 2 projects, the Checklist shall be completed by a certified or authorized professional and submitted to [*Entity's name*] along with the Landscape and Irrigation Design Plan.

A. Plant Material

i. Each hydrozone shall have plant materials with similar water use that are selected and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site.

ii. The turf area shall not be more than 25% of the landscape area [*or no more than _____ square feet*], unless the project applicant develops a site-specific water budget and the ETWU of the landscape area does not exceed the MAWA.

iii. Turf shall not be planted on slopes greater than 25% or in areas that are less than eight feet wide, unless irrigated with subsurface irrigation or a low volume irrigation system.

iv. At least 80% of the plants in non-turf landscape areas shall be native plants, low-water using plants, or no-water using plants, unless the project applicant develops a site-specific water budget and the ETWU of the landscaped area does not exceed the MAWA.

v. Fire-prone plant materials and highly flammable mulches should be avoided.

vi. The use of invasive and/or noxious plant species is strongly discouraged.

vii. The architectural guidelines of a common interest development shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group.

B. Mulch

A minimum two-inch layer of mulch shall be applied on all exposed soil surfaces of planting areas, although a three-inch layer is recommended.

C. Irrigation System

An irrigation system shall meet all the requirements listed in this section and the manufacturers' recommendations. The irrigation system and its related

components shall be planned and designed to allow for proper installation, management, and maintenance.

i. Dedicated landscape water meters shall be required for landscape areas greater than 5,000 square feet and are highly recommended for landscape areas greater than 2,500 square feet.

ii. *Tier 2 Landscapes* are required to have automatic irrigation controllers that utilize either evapotranspiration or soil moisture sensor data for irrigation scheduling.

iii. Sensors (rain, freeze, wind, etc.), either integral or auxiliary, that suspend or alter irrigation operation during unfavorable weather conditions shall be required on all irrigation systems.

iv. The irrigation system shall be designed to prevent runoff, low head drainage, overspray, or other similar conditions.

v. Low volume irrigation required in mulched areas, in areas with slope greater than 25%, and within 24-inches of a non-permeable surface, or in narrow or irregularly shaped areas that are less than eight feet in width in any direction.

vi. Average irrigation efficiency is assumed to be 70%. Irrigation systems shall be designed, maintained, and managed to meet or exceed an average landscape irrigation efficiency of 70%.

vii. Irrigation shall be scheduled between 8:00 p.m. and 10:00 a.m., unless unfavorable weather prevents it or otherwise renders irrigation unnecessary.

D. Hydrozone

i. Each valve shall irrigate a hydrozone with similar site, slope, sun exposure, soil conditions, and plant materials with similar water use.

ii. Sprinkler heads and other emission devices shall be selected based on what is appropriate for the plant type within that hydrozone.

iii. Where feasible, trees shall be placed on separate valves from shrubs, groundcovers, and turf.

iv. Individual hydrozones that mix plants with different water uses may be allowed if a water budget is performed, and the plant factor calculation is based on the proportion of the respective plant water uses or the plant factor of the higher water using plant is used.

E. Water Features

i. Recirculating water systems will be used for water features.

ii. The surface area of a water feature will not exceed 10% of the landscape area and will be counted as a high-water using plant for purposes of a water budget calculation.

iii. Pool and spa covers are highly recommended.

F. Soil Amendments

Soil amendments, such as compost, shall be incorporated according to the soil conditions at the project site and based on what is appropriate for the selected plants.

VIII. Water Budget Calculations

Project applicant may elect to complete a water budget calculation for the landscape project. A Tier 1 water budget may be developed and completed by the project applicant. A Tier 2 water budget calculation must be completed by a certified or authorized professional. Water budget calculations, if prepared, shall adhere to the following requirements:

A. The plant factor used shall be from WUCOLS. The plant factor ranges from 0.0 to 0.3 for low water use plants, from 0.4 to 0.6 for moderate water use plants, and from 0.7 to 1.0 for high water use plants.

B. All water features shall be included in the high water use hydrozone.

C. All Special Landscape Areas (SLA) shall be identified and their water use included in the water budget calculations.

D. The reference evapotranspiration adjustment factor (ETAF) for SLA shall not exceed 1.0. The ETAF for all other landscaped areas shall not exceed 0.7.

E. Irrigation system efficiency shall be greater than or equal to 70%.

F. Maximum Applied Water Allowance (MAWA) shall be calculated using the equation below:

MAWA = (ETo) (0.62) [(0.7 x LA) + (0.3 x SLA)]

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

G. A local agency or project applicant may consider Effective Precipitation (25% of annual precipitation) in tracking water use and may use the following equation to calculate the MAWA:

MAWA= (ETo - Eppt) (0.62) [(0.7 x LA) + (0.3 x SLA)]

H. Estimated Total Water Use (ETWU) will be calculated using the equation below. The sum of the ETWU calculated for all hydrozones will not exceed the MAWA.

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

Where:
ETWU = Estimated Total Water Use per year (gallons)
ETo = Reference Evapotranspiration (inches)
PF = Plant Factor from WUCOLS (see Section 491)
HA = Hydrozone Area [high, medium, and low water use areas] (square feet)
SLA = Special Landscape Area (square feet)
0.62 = Conversion Factor
IE = Irrigation Efficiency (minimum 0.70)

IX. Landscape and Irrigation Design Plans

A. *Tier 1 Landscapes*: The Landscape and Irrigation Design Plan may be prepared by, and bear the signature of, the project applicant, or that of a certified or authorized professional.

B. *Tier 2 Landscapes*: The components of the Landscape and Irrigation Design Plan shall be prepared as follows:

i. The landscape design portion shall be prepared by, and bear the signature of, a licensed landscape architect, licensed landscape contractor, or that of a certified or authorized professional; and

ii. The irrigation design portion shall be prepared by, and bear the signature of, a licensed landscape architect, certified irrigation designer, licensed landscape contractor, or that of a certified or authorized professional.

C. The landscape design portion of the Landscape and Irrigation Design Plan, at a minimum, shall:

i. Delineate and label each hydrozone;

ii. Identify each hydrozone as low, moderate, high water, or mixed water use;

iii. Identify Special Landscape Areas (i.e., recreational areas; areas permanently and solely dedicated to edible plants; areas irrigated with recycled water);

iv. Identify type of mulch and application depth;

v. Identify type and surface area of water features;

vi. Identify hardscapes (pervious and non-pervious); and

vii. Contain the following statement: “I have complied with the criteria of the Water Conservation in Landscaping Ordinance and applied them for the efficient use of water in the Landscape and Irrigation Design Plan.”

D. The irrigation design portion of the Landscape and Irrigation Design Plan, at a minimum, shall contain:

i. Location and size of separate water meters for landscape;

ii. 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, pressure regulators, and backflow prevention devices;

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

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

v. Irrigation schedule;

vi. The following statement: “I have complied with the criteria of the Water Conservation in Landscaping Ordinance and applied them accordingly for the efficient use of water in the Landscape and Irrigation Design Plan.”

E. Grading

If the Landscape Project will be graded, then the grading shall be designed to minimize soil erosion, runoff, and water waste. All grading should be conducted to:

i. Maintain all irrigation and normal rainfall within property lines and avoid drainage on to non-permeable hardscapes;

ii. Avoid disruption of natural drainage patterns and undisturbed soil;

iii. Avoid soil compaction in landscape areas; and

iv. Be consistent with city and county grading requirements.

X. Landscape Audit Report

A. *Tier 1 Landscapes*: Landscape irrigation audits for new or rehabilitated landscapes installed after [*Ordinance adoption date*] shall be conducted after the landscaping and irrigation systems have been installed. The audit may be conducted by the project applicant or by a certified landscape irrigation auditor.

B. *Tier 2 Landscapes*: Landscape irrigation audits for new or rehabilitated landscapes installed after [*Ordinance adoption date*] shall be conducted by a certified landscape irrigation auditor after the landscaping and irrigation system have been installed.

C. The Landscape Audit Report shall include, but is not limited to: inspection to confirm that the landscaping and irrigation system were installed as specified in the Landscape and Irrigation Design Plan, system tune-up, system test with distribution uniformity, reporting overspray or run off that causes overland flow, and preparation of an irrigation schedule.

D. The Landscape Audit Report shall include the following statement: "The landscape and irrigation system has been installed as specified in the Landscape and Irrigation Design Plan and complies with the criteria of the Ordinance and the permit".

E. Local agency shall administer on-going programs that may include, but not be limited to, post-installation landscape inspection, irrigation water use analysis, irrigation audits, irrigation surveys and water budget calculations to evaluate compliance with the MAWA.

XI. Landscape and Irrigation Maintenance Schedule

Landscapes shall be maintained to ensure water use efficiency.

A. A regular maintenance schedule shall include, but not be limited to, routine inspection; adjustment and repair of the irrigation system and its components; aerating and dethatching turf areas; replenishing mulch; fertilizing; 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. A Project applicant is encouraged to implement sustainable or environmentally-friendly practices for overall landscape maintenance.

XII. Stormwater Management

Stormwater best management practices should be implemented into the landscape and grading design plans to minimize runoff and to increase on-site retention and infiltration and should be consistent with city and county stormwater management requirements.

XIII. Provisions for Existing Landscapes Over One Acre in Size

This section shall apply to all existing landscapes that were installed before [*Ordinance adoption date*] and are over one acre in size.

A. Irrigation Audit, Irrigation Survey, and Irrigation Water Use Analysis.

i. For landscapes that have a water meter, the local agency shall administer programs that may include, but not be limited to, irrigation water use analyses, irrigation surveys, and irrigation audits to evaluate water use and provide recommendations as necessary to reduce landscape water use to a level that does not exceed the MAWA for existing landscapes. The MAWA for existing landscapes shall be calculated as:

$$MAWA = (0.8)\ (ETo)(LA)(0.62).$$

ii. For landscapes that do not have a meter, the local agency shall administer programs that may include, but not be limited to, irrigation surveys and irrigation audits to evaluate water use and provide recommendations as necessary in order to prevent water waste.

iii. All landscape irrigation audits for existing landscapes that are greater than one acre in size shall be conducted by a certified landscape irrigation auditor.

B. Water Waste Prevention.

Local agencies shall prevent water waste resulting from inefficient landscape irrigation by prohibiting runoff from leaving the target landscape due to low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, parking lots, or structures.

XIV. Penalties

A local agency may establish and administer penalties to the project applicant for non-compliance with this Ordinance to the extent permitted by law.

[*Note: The precise provisions of this section should be tailored to the specific policies and goals of your organization.]*

A. Violation and Notice of Correction.

It is unlawful for any person, firm, partnership, association, or corporation subject to the requirements of this Ordinance to fail to comply with the outdoor water use efficiency requirements of this Ordinance. [*Insert appropriate City/County/Water District official*] has the authority to conduct such inquiries, audits or surveys to ensure compliance with the requirements of this Ordinance. Whenever the [*insert appropriate City/County/Water District official]* determines that a violation of this Ordinance has occurred, the [*insert appropriate City/County/Water District official]* may serve a notice of correction on the owner(s) of the property on which

the violation is situated. The owner(s) of record shall have ninety (90) days to take corrective action.

B. [*For Cities and Counties*] Administrative Enforcement.

In addition to any other remedy provided by the [*insert entity's name]*'s Municipal Code, any provision of this Ordinance may be enforced by an administrative order issued pursuant to any one of the administrative processes set forth in Section _____ of the [*insert entity's name]*'s Municipal Code. The [*insert commission/governing body*] shall serve as the administrative enforcement hearing officer for the purposes of considering any appeals.

C. [*For Water Districts*] Enforcement.

If an applicant for new or expanded water service fails to comply with the provisions of this Ordinance, the District may require the applicant to resubmit its water service application and revised Landscape Project Application for approval and may withhold approval of the application until the applicant complies with the terms of this Ordinance. In addition to any other remedy provided herein, the District may also refer enforcement of violations under this Ordinance to the City Attorney of the municipality [*or District Attorney/County Counsel/County*] where the violation occurred.

XV. Public Education

A. The local agency shall provide information to all applicants regarding the design, installation, management, and maintenance of water-efficient landscapes and irrigation systems.

B. All model homes that are landscaped shall use signs and written information to demonstrate the principles of water-efficient landscapes that are described in this Ordinance.

XVI. Severability

If any section, subsection, provision or part of this Ordinance, or its application to any person or circumstance, is held to be unconstitutional or otherwise invalid, the remainder of this Ordinance, and the application of such provision to other person or circumstances, shall not be affected thereby and shall remain in full force and effect and, to that end, the provisions of this Ordinance are severable.

XVII. Effective Date

This Ordinance shall become effective on _____, 2009/2010. *[For Cities/Counties, 30 days after enactment]*

INTRODUCED at a regular meeting of the [*City Council/Board of Directors/Board of Supervisors*] held on _____, 2009/2010.

ATTACHMENT 4

Chapter 27.71 LANDSCAPE

27.71.010 PURPOSE.

The purpose of this chapter is to enhance the quality of life in San Mateo by the provision for appropriate design of landscaping and through the preservation of existing trees. Landscaping shall be a major component of all site design in order to create a city that has a strong landscaped character. The intent is that individual neighborhood character be developed and maintained, architecture be softened by plant materials where appropriate, conflicting uses be buffered, parking areas be screened, comfortable outdoor living and walking spaces be created, air pollution be mitigated and future developments be made water efficient. (Ord. 1989-34, § 1, 1989).

27.71.020 SCOPE.

This chapter shall apply as a minimum for all projects requiring approval of a planning application pursuant to Section 27.08.010, except for Single Family Dwelling Design Review applications. Landscaping not subject to this chapter shall be governed by the provisions of Chapter 10.52—Heritage Trees. The Zoning Administrator may determine that minor additions or changes to existing property are not reasonably related to the purpose of this chapter and may be exempt from the requirements of this chapter. (Ord. 2009-7 § 38, 2009; Ord. 1989-34, § 1, 1989).

27.71.030 GENERAL OBJECTIVES.

(a) Required Landscaping. All required front and street side yards shall be landscaped, except for necessary driveways and walkways. In all other areas landscaping shall be required except for necessary circulation areas, paved outdoor living areas or water features.

(b) Buffering and Screening. Plantings shall be provided to buffer residential uses from commercial or industrial uses. Plantings shall also be provided to screen service and storage areas, parking lots or unsightly areas. Plantings shall be used where appropriate to control noise, wind, climate and ensure privacy.

(c) Outdoor Living Areas. Landscaping shall be arranged so as to provide usable outdoor living areas where appropriate. Plant materials and architectural features should be used to control noise, sun and wind and provide adequate privacy.

(d) Composition of Required Landscaping. All required landscaping shall include the planting and maintenance of some combination of trees, groundcover, shrubs, vines, annuals and lawns. In addition, the combination or design may include natural or structural features, including but not limited to fountains, reflecting pools, artwork, screens, walls, and fences.

(e) Security. Landscaping shall be installed and maintained to provide aesthetic quality while promoting building security.

(f) Minimum Requirements. The provisions contained in this chapter are intended to be a minimum standard. Compatibility with other projects and compliance with required findings and adopted goals and policies of the City shall be evaluated through the planning application process. (Ord. 2008-8 § 15, 2008; Ord. 1989-34, § 1, 1989).

27.71.040 DEFINITIONS.

The following definitions shall apply to this chapter:

(a) "Annuals" means live annual vegetation that is normally replaced on a seasonal or yearly basis.

(b) "Drought tolerant" means the ability to survive with little or no water other than available rainfall. Drought tolerant plants include those contained in publications referred to in Section 27.71.130.

(c) "Groundcover" means low growing live perennial vegetation, other than turf, of a species which is sold as a groundcover or shrub by licensed nurserymen.

(d) A "heritage tree" is any one of the following:

(1) Any bay (Umbellularia californica), buckeye (Aesculus spp.), oak (Quercus spp.), cedar (Cedrus ssp.) or redwood (Sequoia sempervirens) tree that has a diameter of ten (10) inches or more measured at forty-eight (48) inches above natural grade;

(2) A tree or stand of trees designated by resolution of the City Council to be of special historical value or of significant community benefit;

(3) A stand of trees, the nature of which makes each dependent on the others for survival;

(4) Any other tree with a trunk diameter of sixteen (16) inches or more, measured at forty-eight (48) inches above natural grade.

(e) "Landscape" or "landscaped area" means an area that consists of living plantings.

(f) "Landscape unit (LU)" means the unit of measurement for trees which indicates the worth of each relative to one another and towards satisfying City requirements.

(g) "Natural landscaping" means an area consisting of uncultivated native plant growth and other features of natural terrain such as rock outcroppings, streams or other areas covered by water.

(h) "Plantings" means annuals, groundcover, turf grass, shrubs or trees.

(i) "Shrubs" means live perennial vegetation, greater than an average height of two feet (2') and maintained below twelve feet (12') in height. Vines shall be considered as shrubs.

(j) "Trees" means a live self-supporting woody plant having at least one well defined stem or trunk and normally attaining a mature height and spread of at least twelve feet (12'), and having a trunk that may, at maturity, be kept clear of leaves and branches at least six feet (6') above grade.

(k) "Turfgrass" means live vegetation of a species normally grown as turf by a nursery and which is maintained at a height of three inches (3") or less. (Ord. 2009-7 § 39, 2009; Ord. 1997-24, § 9, 1997; Ord. 1989-34, § 1, 1989).

27.71.050 MAINTENANCE.

All landscape areas shall be maintained free of weeds, litter and debris. All plantings shall be maintained in a healthy growing condition and whenever necessary, replaced with equivalent plant materials to ensure continued conformance with approved plans. (Ord. 1989-34, § 1, 1989).

27.71.060 PLANT ESTABLISHMENT PERIOD.

A plant establishment period of three (3) growing season months (March through October) shall be required for all landscape areas. At the completion of this period all plant materials shall be in a healthy condition and the landscaped area shall be maintained free of weeds, litter and debris.

(a) For projects with less than 10,000 square feet of landscaped area, proof of a contract with a licensed landscape contractor to maintain the landscape for the plant establishment period shall be submitted.

(b) For projects with greater than 10,000 square feet of landscape area and for all residential condominiums, financial securities shall be held by the City as required in Section 27.71.090 to ensure compliance with the plant establishment period. (Ord. 1989-34, § 1, 1989).

27.71.070 SUBMITTALS REQUIRED FOR A PLANNING APPLICATION.

(a) All landscape plans must be at a reasonable scale to indicate all types of improvements. All plans must contain sufficient information to ensure conformance with the requirements of this chapter and must include but are not limited to the following information:

(1) North arrow and scale;

(2) The name of the applicant/owner;

(3) The name, address, and phone number of the person or firm responsible for the preparation of the plans and other required information;

(4) The dates the plans are submitted and revised;

(5) All existing and proposed buildings and other structures, paved areas, planted areas, power poles, fire hydrants, light standards, signs, fences, and other permanent features to be added and/or retained on the site;

(6) All existing plant material to remain and to be removed, a tree evaluation schedule identifying trees as to size, species, the condition of trees to be removed as determined by an arborist and the existing and proposed replacement LU values;

(7) All existing and proposed streets, sidewalks, curbs and gutters, railroad tracks, drainage ditches, and other public or semi-public improvements within and immediately adjacent to the site;

(8) Contour lines, if the slopes are in excess of 10 percent;

(9) Existing and proposed topographic elevations at sufficient locations, to clearly show the drainage pattern unless this information is provided on a grading plan or other documents in the planning application;

(10) All property lines and easements;

(11) Square footage of all planted area;

(12) Square footage of all turf area;

(13) Species, sizes and location of all proposed plant material;

(14) Soil tests as required by the discretion of the Zoning Administrator;

(15) A tree protection plan consistent with the section 13.52.025(c) of the municipal code.

(b) All projects with over 1,000 square feet of new or modified planting areas as required to meet the provisions of this chapter shall have all landscape plans and accompanying documents prepared or reviewed and found acceptable by a licensed landscape architect registered with the State of California. (Ord. 2009-7 § 40, 2009; Ord. 1989-34, § 1, 1989).

27.71.080 SUBMITTALS REQUIRED FOR A BUILDING PERMIT APPLICATION.

(a) All of the required submittals for a planning application;

(b) Type and depth of mulch indicated on the plan;

(c) An irrigation plan accurately drawn to scale that indicates all components of the irrigation system including sprinklers and other outlets, valves, the backflow prevention device(s), controller(s), and piping;

(d) All required tree preservation fees as required in Section 27.71.180;

(e) For projects with less than 10,000 square feet of landscaped area, proof of a contract with a licensed landscape contractor to maintain the landscape area for the plant establishment period; and

(f) For projects with greater than 10,000 square feet of landscape area, financial securities as required in Section 27.71.090; and

(g) Soil tests as required in Section 27.71.110. (Ord. 1989-34, § 1, 1989).

27.71.090 REQUIREMENTS FOR USE OR ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

(a) Prior to use, final inspection, or the issuance of certificate of occupancy, all landscaping shall be installed in conformance with the approved plans.

(b) Phased Projects. Incremental landscape installation may be permitted by the Zoning Administrator when building construction is phased.

(c) Financial Securities. Financial securities shall be required for all projects with over 10,000 sq. ft. of landscape area and for all residential condominiums. On smaller projects where adverse weather, drought conditions or project phasing prohibit the installation of landscaping, the Zoning Administrator may allow financial securities to be submitted to the City in order to allow use or issuance of a certificate of occupancy. The security shall be in a form which is legally sufficient to ensure the preservation of trees and the installation of all approved landscape improvements. Financial securities shall be returned to the applicant upon completion of the plant establishment period. The City shall be the beneficiary and the sole determinant of compliance and completion. A detailed cost estimate of all landscape improvements plus the value of any existing trees to remain, as determined in Section 27.71.180, shall be used to determine the amount of security. (Ord. 1989-34, § 1, 1989).

27.71.100 AUTOMATIC IRRIGATION.

All landscaped areas shall be provided with an automatic irrigation system that is adequate to support the vegetation selected. Irrigation systems shall be designed and installed so as to limit runoff and overspray. The Zoning Administrator may determine that, due to the conditions required by native plantings an automatic irrigation system would not be necessary, and may approve an alternative method of watering.

(a) Backflow Prevention. Backflow prevention device for the irrigation system shall be located in areas least noticeable from view and shall consist of one of the following:

(1) A pressure-type vacuum breaker located twelve inches (12”) above the highest water outlet or piping downstream;

(2) A reduced pressure-type backflow prevention device located twelve inches (12”) above finished grade; or

(3) Atmospheric-type vacuum breakers located downstream from each control valve and twelve inches (12”) above the highest water outlet or piping downstream.

(b) Separation of Zones. Turfgrass, non-drought tolerant plantings and drought tolerant plantings shall all be irrigated with separate valves.

(c) Low Volume Water Distribution. Low volume heads and emitters shall be used where site conditions are appropriate such as on wind protected hillsides. Low volume is defined as emitting less than 0.75 inches per hour of water.

(d) Automatic Moisture Sensor. All irrigation systems with over 20,000 square feet of area irrigated with spray systems shall contain at least one automatic moisture sensor device per type of zone (e.g. lawn or groundcover).

(e) Tree and Shrub Drip System. All trees and shrubs shall be irrigated with a drip or bubbler system, with the exception of shrubs planted with groundcover, which may be irrigated with a spray system. (Ord. 1991-7 § 2, 1991; Ord. 1989-34, § 1, 1989).

27.71.110 LANDSCAPE COMPATIBILITY AND SOIL TESTING.

The location and nature of all landscaping shall be compatible with the soil, amendments, existing plantings to remain and character of the landscaping in the vicinity. For projects with over 10,000 sq. ft. of landscape area or in areas of questionable soils such as the foothills or areas of bay fill, soils testing shall be required. Testing shall be performed by a professional testing laboratory. Soil shall be amended according to test report recommendations. (Ord. 1989-34, § 1, 1989).

27.71.120 PLANT COVERAGE AND TREE SIZES.

(a) Allowed Bare Ground. Areas of bare ground or ground covered only by bark or rocks shall be allowed on site only where required as part of an approved facility, such as a baseball diamond, vegetable garden, flowerbed, or similar use.

(b) Allowed Natural Landscaping. Natural landscaping shall be allowed only in areas where it is compatible with the surrounding environment.

(c) Turfgrass.

(1) The combined turf and or water area (i.e., pools, ponds and fountains) shall be limited to 25 percent of the landscaped area for landscapes over 1000 square feet.

Ground level patios, plazas and decks may be included in the total landscaped area for purposes of figuring the allowable amount of turf. This turf limitation is excluded for public parks, golf courses, cemeteries and school recreation areas.

(2) Long narrow strips of turfgrass such as traffic medians and areas between curbs and sidewalks are prohibited.

(3) Turfgrass on slopes shall be permitted only where slopes do not exceed twenty-five percent (25%) in grade.

(d) Annuals. Areas to be planted in annual flowers shall be a maximum of 5 percent of the total landscaped area unless the plants used are drought tolerant.

(e) Minimum Tree Size. All required trees shall be a minimum size of 15 gallon container at time of installation, except for Heritage tree replacements, which require a minimum size of 24” box.

(f) Plant Coverage:

(1) Trees shall be planted at a minimum ratio of 1 per 400 square feet of required landscaped area. The ratio may include existing trees and required street and parking area trees. In some instances a greater ratio will be necessary to achieve desired landscaping objectives. Required tree ratio excluded for public parks, golf courses, cemeteries and school recreation areas.

(2) Groundcover and shrub massing areas shall be planted in a manner or at the spacings recommended by the American Association of Nurserymen, to uniformly cover the proposed groundcover areas within two (2) years and the shrub areas within five (5) years or a period optimum for the species.

(g) Security planting. The use of plant materials that promote building security is encouraged. A list of such materials may be obtained from the planning division. Perimeter landscaped areas should incorporate thorny plant materials to discourage persons from cutting through parking areas, trampling vegetation near ground floor windows, or climbing perimeter fences and walls. (Ord. 2009-7 § 41, 2009; Ord. 2008-8 § 16, 2008; Ord. 1989-34, § 1, 1989).

27.71.130 DROUGHT TOLERANT PLANTINGS.

Ninety percent (90%) of all plant materials, except for allowable turf grass and annuals, shall be drought tolerant, as listed by the California Department of Water Resources in Bulletin 209 (1979 Ed. or later) entitled, Plants for California Landscapes (A Catalogue of Drought Tolerant Plants), The East Bay Municipal Utility District, Water Conserving Plants and Landscapes for the Bay Area, or other plant material which has been documented as being drought tolerant. The Zoning Administrator may determine that non-drought tolerant plantings are more appropriate due to surrounding riparian or heavily shaded conditions, and may approve non-drought tolerant plants in those areas. (Ord. 1989-34, § 1, 1989).

27.71.140 MULCH.

A 2-inch depth layer of mulch shall be required in all new planting areas except in areas of turfgrass or annuals. Non-porous material shall not be placed under the mulch. (Ord. 1989-34, § 1, 1989).

27.71.150 STREET TREES.

(a) Tree Planting. Fifteen-gallon or larger street trees shall be planted along public streets in accordance with the City Street Tree Master Plan. Trees shall be planted at a spacing not to exceed 30 feet except to allow for utilities, street furnishings and driveways. Trees shall be planted closer than 30 feet if so recommended by the City Arborist.

(b) Tree Maintenance Easement. Where a planning application requires a parcel or tentative map, a street tree maintenance easement shall be required if the street trees are to be located on private property and no such easement exists. However, it is recommended that even when a parcel or tentative map is not required or included, an easement be provided to allow the City to maintain the trees (other than irrigating) on private property. (Ord. 1989-34, § 1, 1989).

27.71.160 PARKING AREAS.

The following requirements shall apply to open parking areas containing five (5) or more parking spaces.

(a) Setbacks. Whenever a parking area is located adjacent to any residential use or zone and along all street frontages, a landscape strip shall be provided that is equal in width to five percent (5%) of the parking lot depth or six feet (6’), whichever is greater.

(b) Percentage of Parking Areas to be Landscaped. At least ten percent (10%) of the open parking area shall be landscaped. The following shall be considered in computing the landscape area:

(1) Parking area includes all paved surfaces devoted to on-site circulation and parking;

(2) Only those landscaped areas within six feet (6’) of a parking stall or aisle shall apply towards meeting the 10% requirement;

(3) Areas to be considered shall include planting areas and required curbing.

(c) Screening. All open parking areas shall be effectively screened on each side adjoining or fronting on any property in a residential zone and along all street frontages. Screening of adjoining property shall be a minimum of four feet (4') to a maximum of six feet (6') in height. Screening along street frontages shall be at least two and one-half feet (2'-6") in height for at least eighty percent (80%) of its length. Screening shall be accomplished by a wall, fence, earth berm, densely planted shrub mass or any combination of the above. Where walls or fences are provided, they shall be located adjacent to the edge of the parking lots. Screening shall conform with the sight distance requirements contained in Chapter 7.24 of the San Mateo Municipal Code.

(d) Parking Lot Islands.

(1) All islands and small areas unused for parking or circulation shall be landscaped. The Zoning Administrator may determine that certain areas for reasons of size, aesthetics or circulation should not be landscaped and may approve paving in those areas.

(2) Interior landscape islands, having a minimum dimension of five feet (5') including curb, shall be provided after every ten (10) parking spaces in a row to provide for tree planting.

(e) Required Trees. For each three (3) parking spaces at least one (1) tree shall be planted within the parking lot landscaped area in addition to any required street trees. Existing trees may be included in the required total.

(f) Protection of Planting Areas. All planting areas shall be protected from common vehicular traffic. For parking lots containing five (5) stalls or more, this requirement shall be met by a six-inch-high vertical concrete curb. For parking lots containing less than 5 stalls, this requirement may be met by a concrete wheel stop in front of each diagonal or perpendicular stall plus a minimum six-inch-high concrete curb in other areas or approved equal. No trees or shrubs shall be planted and sprinkler heads shall be kept below curb height within two feet six inches (2'6") of any curb or wheel stops which front upon parking stalls or backup areas. (Ord. 1989-34, § 1, 1989).

27.71.170 RIGHT-OF-WAY LANDSCAPING.

The unpaved right-of-way area located between the public street and private property shall be landscaped in a manner compatible with the required landscaping on site. Such landscaping shall be permanently maintained by the property owner in conformance with the approved plans and so as not to create a safety hazard. Strips of public right-of-way located between the curb and sidewalks may not be paved but must likewise be landscaped. (Ord. 2009-7 § 42, 2009; Ord. 1989-34, § 1, 1989).

27.71.180 PRESERVATION OF EXISTING TREES.

(a) Evaluation of Existing Trees. Trees over six inches (6") in caliper shall be evaluated on the basis of species, size, condition, location and classification as a heritage tree.

(b) Required Submittals. To evaluate the existing trees the landscape plan and a tree evaluation schedule shall be submitted with the planning application showing:

(1) The location of all existing trees 6 inches or greater in caliper, noting which are to be removed and which are located within the allowable building area;

(2) Caliper size in inches measured 48 inches above grade;

(3) Species name and species value as determined by utilizing the most recent edition of the Guide for Plant Appraisal, published by the Council of Tree and Landscape Appraisers;

(4) Condition and location value of trees as determined by an arborist or landscape architect;

(5) The total LU value of trees to be removed; and

(6) The total LU value of replacement trees.

(c) Landscape Unit Value (LU).

(1) The tree species, condition, and location values of the trees shall be based on an evaluation by an experienced landscape appraiser recognized by the American Society of Consulting Arborists utilizing the most recent Guide for Plant Appraisal, published by the Council of Tree and Landscape Appraisers; and approved by the Zoning Administrator.

(2) Trees not within the allowable building area shall receive a location factor of 1.0 (100%). Trees located within the allowable building area shall receive a location factor of.70 (70%).

(3) Trees designated as heritage trees shall receive a bonus percentage value of 1.25 (125%). Trees located within the allowable building area shall receive a location factor of.70 (70%).

(4) Trees designated as heritage trees shall receive a bonus percentage value of 1.25 (125%).

The species, condition and location value assume an average tree value to be.70 (.7 x.7 x .7 =.343). All existing trees to be removed shall be given a LU value based upon the following calculation:

$$\frac{\text{species value\% x condition value\% x location value\%}}{.35} \times \text{caliper inches x bldg./setback\% x heritage tree\%} = \text{LU}$$

(d) Tree Replacement. Existing trees to be removed shall be replaced with new trees to equal the total removed LU value. The following rates shall be given to replacement trees to obtain the replacement LU value:

LU Value	Replacement Tree Size
1	15 gallon
2	24-inch box
3	36-inch box
4	48-inch box

Replacement trees shall be in addition to and not substitute requirements for street trees, parking lot trees or other required trees.

(e) Preservation of Heritage Trees. The site design shall make every reasonable effort to preserve heritage trees, consistent with the section 13.52.025 of the municipal code. Conditions shall also be imposed to protect heritage trees during construction. Heritage trees shall be removed only when it is demonstrated that preservation of these trees would result in a threat to health, safety, and welfare due to a hazardous tree condition, impacts on soil erosion and stability, or an unreasonable effect upon the economic enjoyment of the property, consistent with section 13.52.040 of the municipal code.

(f) Protection of Existing Trees. The site design shall make reasonable effort to protect existing trees. The design shall be evaluated as to how it protects existing trees or the reasons for removal of existing trees. Tree protection measures shall be provided for trees to remain on site, which shall be consistent with section 13.52.025 of the municipal code and imposed as a condition of approvals.

(g) Alternates to On-Site Replacement. If the required LU value for replacement of existing trees to be removed is not made up with replacement trees on-site, the City shall require that trees be planted in another location on-site or off-site or a contribution of funds be made to the City to be used for plantings on public land or a combination of the above options. If a contribution of funds is required, it shall be two hundred and fifty dollars ($250.00) per required LU or such other fee as may be established by Resolution of the City Council in the annual Comprehensive Fee Schedule. (Ord. 2009-7 § 43, 2009; Ord. 1989-34, § 1, 1989).

Attachment 5

Adopted Water Efficiency Ordinances by San Mateo County Cities

	State DWR Ordinance	BAWSCA Ordinance	Alternative Ordinance	No Ordinance Adopted
Atherton	X			
Belmont	X			
Brisbane		X		
Burlingame		X (1,500 sqft min)		
Colma			X	
Daly City		X		
East Palo Alto			X	
Foster City		X		
Hillsborough		X (2,500 sqft min)		
Menlo Park		X (2,500 sqft min)		
Millbrae	X			
Pacifica	X			
Portola Valley		X		
Redwood City				X
San Bruno			X	
San Carlos			X	
San Mateo				X
San Mateo (County)	X			
South San Francisco			X	
Woodside	X			