CITY OF
HAYWARD
HEART OF THE BAY

January 28, 2010

Mr. Simon Eching
California Department of Water Resources
Office of Water Use Efficiency
901 P Street, Third Floor
P. O. Box 942836
Sacramento, CA 94236-0001

Subject: Adoption of City of Hayward Bay-Friendly Water Efficient Landscape Ordinance

Dear Mr. Eching,

The City of Hayward is subject to AB 1881, Section 65597, Water Conservation in Landscaping. This letter is to inform you that, on January 15, 2010, the Hayward City Council adopted the City of Hayward Bay-Friendly Water Efficient Landscape Ordinance (Ordinance). A copy of our Ordinance, and the resolution adopting the Ordinance, is attached.

The Ordinance includes all provisions of the DWR's Model Ordinance. In addition, the Ordinance may extend to smaller new development and rehabilitated landscapes at the discretion of the Director of Development Services. We have concluded that our Ordinance addresses the needs of our local community and is at least as effective as the DWR's Model Ordinance in conserving water.

If you have any questions, please do not hesitate to contact me at (510) 583-4720 or via e-mail at alex.ameri@hayward-ca.gov.

Sincerely,

Alex Ameri
Deputy Director of Public Works

cc. Robert Bauman, Director of Public Works

Attachments:
1. City of Hayward Bay-Friendly Water Efficient Landscape Ordinance, as adopted by the City of Hayward City Council on January 15, 2010
2. Resolution No. 09-184

HAYWARD CITY COUNCIL

RESOLUTION NO. 09-184

Introduced by Council Member Henson

RESOLUTION FINDING THAT THE ENACTMENT OF THE CITY OF HAYWARD BAY-FRIENDLY WATER EFFICIENT LANDSCAPE ORDINANCE IS CATEGORICALLY EXEMPT FROM ENVIRONMENTAL REVIEW UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

BE IT RESOLVED by the City Council of the City of Hayward that the City Council finds that the enactment of the City of Hayward Bay-Friendly Water Efficient Landscape Ordinance, Article 12 of Chapter 10 of the Hayward Municipal Code, is categorically exempt from environmental review under the California Environmental Quality Act, pursuant to Section 15308 of the CEQA Guidelines, Actions by Regulatory Agencies for Protection of the Environment.

IN COUNCIL, HAYWARD, CALIFORNIA December 1, 2009

ADOPTED BY THE FOLLOWING VOTE:

AYES: COUNCIL MEMBERS: Zermeño, Quirk, Halliday, Dowling, Henson
MAYOR: Sweeney

NOES: COUNCIL MEMBERS: May

ABSTAIN: COUNCIL MEMBERS: None

ABSENT: COUNCIL MEMBERS: None

ATTEST: _____
City Clerk of the City of Hayward

APPROVED AS TO FORM:

_____
City Attorney of the City of Hayward

ORDINANCE NO. 09-16

ORDINANCE REPEALING AND REPLACING CHAPTER 10 ARTICLE 12 OF THE HAYWARD MUNICIPAL CODE RELATING TO WATER EFFICIENT LANDSCAPE ORDINANCE

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

Section 1. Upon the effective date of this ordinance, Chapter 10, Article 12, of the Hayward Municipal Code is hereby repealed and, in substitution thereof, and a new Article 12 of Chapter 10 of the Hayward Municipal Code is hereby enacted to read in full as follows:

"ARTICLE 12

CITY OF HAYWARD
BAY-FRIENDLY WATER EFFICIENT LANDSCAPE ORDINANCE

Section	Subject Matter
10-12.01	AUTHORITY
10-12.02	PURPOSE
10-12.03	APPLICABILITY
10-12.04	DEFINITIONS
10-12.05	COMPLIANCE WITH LANDSCAPE DOCUMENTATION PACKAGE
10-12.06	ENFORCEMENT
10-12.07	LANDSCAPE DOCUMENTATION PACKAGE
10-12.08	WATER EFFICIENT LANDSCAPE WORKSHEET
10-12.09	SOIL MANAGEMENT REPORT
10-12.10	LANDSCAPE DESIGN PLAN

10-12.11 IRRIGATION DESIGN PLAN

10-12.12 GRADING DESIGN PLAN

10-12.13 CERTIFICATE OF COMPLETION

10-12.14 IRRIGATION SCHEDULING

10-12.15 LANDSCAPE AND IRRIGATION MAINTENANCE SCHEDULE

10-12.16 IRRIGATION AUDIT, SURVEY, AND WATER USE ANALYSIS

10-12.17 STORMWATER MANAGEMENT

10-12.18 PUBLIC EDUCATION

10-12.19 IRRIGATION AUDIT, SURVEY, AND WATER USE ANALYSIS FOR EXISTING LANDSCAPES

10-12.20 EFFECTIVE PRECIPITATION

APPENDICES

APPENDIX A. REFERENCE EVAPOTRANSPIRATION TABLE

APPENDIX B. WATER EFFICIENT LANDSCAPE WORKSHEET

SECTION A. HYDROZONE INFORMATION TABLE

SECTION B. WATER BUDGET CALCULATIONS

APPENDIX C. CERTIFICATE OF COMPLETION

ARTICLE 12

CITY OF HAYWARD
BAY-FRIENDLY WATER-EFFICIENT LANDSCAPE ORDINANCE
(Added by Ordinance No. 09-16, adopted December 15, 2009)

SEC. 10-12.01 AUTHORITY. This Article is enacted pursuant to California Government Code section 65591 et seq. and is a "water-efficient landscape ordinance" adopted by a local agency under the provisions of said section.

SEC.10-12.02 PURPOSE. The City Council finds and declares that it is in the public interest to promote the conservation and efficient use of water and to prevent the waste of this valuable resource while recognizing the values and benefits of landscapes as essential to the quality of life in California. Landscapes provide areas for active and passive recreation and enhance the environment by cleaning air and water, preventing erosion, offering fire protection, and replacing ecosystems lost to development. The purpose of the regulations set forth in this Article is to establish a structure for planning, designing, installing, maintaining and managing water efficient landscapes in new construction and rehabilitated projects; establish provisions for water management practices and water waste prevention for existing landscapes; utilize Bay-Friendly Landscaping a whole systems approach to the design, construction and maintenance of the landscape, to conserve water; and adopt the Bay-Friendly Landscape Guidelines, Bay-Friendly Landscape Scorecards and Bay-Friendly Gardening Guide, as they may be amended from time to time, City reference documents.

This Article shall be applied in a manner that achieves the maximum consistency with the landscaping performance standards contained in the Hayward Zoning ordinance, Article 1 of Chapter 10 of the Hayward Municipal Code. To the extent that a conflict exists between this Article and the Zoning Ordinance, the requirements of this Article shall control.

SEC. 10-12.03 APPLICABILITY.

(a) After January 1, 2010, this Article 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 planning permit. Other projects requiring a planning permit may be subject to provision of this Article at the discretion of Director of Development Services; and

(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, or planning approval. Other projects requiring planning approval may be subject to provision of this Article at the discretion of Director of Development Services; and

(3) New construction and rehabilitated 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 planning approval. Other projects requiring planning approval may be subject to provision of this Article at the discretion of Director of Development Services; and

(4) Existing landscapes as limited by Section 10-12.18; and

(5) Cemeteries: Recognizing the special landscape management needs of cemeteries, new and rehabilitated cemeteries are governed by to Sections 10-12.07, 10-12.14 and 10-12.15; and existing cemeteries are governed by to Section 10-12.18.

(b) This Article 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.

SEC. 10-12.04 DEFINITIONS. The following words and phrases whenever used in this Article shall be construed as defined 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) "Bay-Friendly Landscape Guidelines" means the most recent version of the guidelines developed by StopWaste.Org for use in the professional design, construction and maintenance of landscapes. City staff shall maintain the most recent version of the "Bay-Friendly Landscape Guidelines" at all times.

(e) "Bay-Friendly Landscaping Scorecard" means the most recent version of the Bay-Friendly Landscaping points system developed by StopWaste.Org. City staff shall maintain the most recent version of the Bay-Friendly Landscaping Scorecard at all times.

(f) "Certificate of Completion" means the document required by Section 10-12.12, in the form set forth in Appendix C.

(g) "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.

(h) "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.

(i) "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.

(j) "Common Interest Developments" means community apartment projects, condominium projects, planned developments, and stock cooperatives pursuant to Civil Code Section 1351.

(k) "Compost" shall mean the product of controlled biological decomposition of organic materials, often including urban plant debris and food waste. It is an organic matter resource that has the unique ability to improve the chemical, physical and biological characteristics of soils or growing media. It contains plant nutrients but is typically not characterized as a fertilizer. (Excerpted from US Compost Council, Field Guide to Compost Use.)

(l) "Conversion Factor (0.62)" means the product of controlled biological decomposition of organic materials, often including urban plant debris and food waste. It is an organic matter resource that has the unique ability to improve the chemical, physical and biological characteristics of soils or growing media. It contains plant nutrients but is typically not characterized as a fertilizer. (Excerpted from US Compost Council, Field Guide to Compost Use.)

(m) "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.

(n) "Drought Resistant Soil" means soil that has been managed by amending with compost and covering with mulch, for example, to maximize rainfall infiltration, increase the soil's capacity to hold water, and allow for plant roots to penetrate and proliferate such that the landscape can survive with less than optimal water (i.e., less than Maximum Applied Water Allowance (MAWA)).

(o) "Ecological Restoration Project" means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

(p) "Effective Precipitation" or "Usable Rainfall" (Eppt) means the portion of total precipitation which becomes available for plant growth.

(q) "Emitter" means a drip irrigation emission device that delivers water slowly from the system to the soil.

(r) "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.

(s) "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.

(t) "Estimated Total Water Use" (ETWU) means the total water used for the landscape as described in Section 10-12.07.

(u) "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.

(v) "Evapotranspiration Rate" means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time.

(w) "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.

(x) "Hardscapes" means any durable material (pervious and non-pervious).

(y) "High-Flow Sensors" or "Flow Meters" detect and report high flow conditions created by system damage or malfunction.

(z) "Hydrozone" means a portion of the landscaped area having plants with similar water needs. A hydrozone may be irrigated or non-irrigated.

(aa) "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).

(bb) "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.

(cc) "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.

(dd) "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 Article is 0.71. Greater irrigation efficiency can be expected from well designed and maintained systems.

(ee) "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.

(ff) "Irrigation Water Use Analysis" means an analysis of water use data based on meter readings and billing data.

(gg) "Landscape Architect" means a person who holds a license to practice landscape architecture in the State of California Business and Professions Code Section 5615.

(hh) "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).

(ii) "Landscape Contractor" means a person licensed by the State of California to construct, maintain, repair, install, or subcontract the development of landscape systems.

(jj) "Landscape Documentation Package" means the documents required under Section 10-12.06.

(kk) "Landscape Project" means total area of landscape in a project as defined in "landscape area" for the purposes of this Article.

(ll) "Lateral Line" means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.

(mm) "Local Agency" means a city or county, including a charter city or charter county, that is responsible for adopting and implementing the Article. The local agency is also responsible for the enforcement of this Article, including but not limited to, approval of a permit and plan check or design review of a project.

(nn) "Local Water Purveyor" means any entity, including a public agency, city, county, or private water company that provides retail water service.

(oo) "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.

(pp) "Main Line" means the pressurized pipeline that delivers water from the water source to the valve or outlet.

(qq) "Maximum Applied Water Allowance" (MAWA) means the upper limit of annual applied water for the established landscaped area as specified in Section 10-12.07. 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.

(rr) "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.

(ss) "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.

(tt) "Mulch" means any organic material such as leaves, arbor or wood chips, recycled wood waste, 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.

(uu) "New Construction" means, for the purposes of this Article, a new building with a landscape or other new landscape, such as a park, playground, or greenbelt without an associated building.

(vv) "Operating Pressure" means the pressure at which the parts of an irrigation system are designed by the manufacturer to operate.

(ww) "Overhead Sprinkler Irrigation Systems" means systems that deliver water through the air (e.g., spray heads and rotors).

(xx) "Overspray" means the irrigation water which is delivered beyond the target area.

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

(zz) "Pervious" means any surface or material that allows the passage of water through the material and into the underlying soil.

(aaa) "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 Article, 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 Article are derived from the Department of Water Resources 2000 publication "Water Use Classification of Landscape Species".

(bbb) "Precipitation Rate" means the rate of application of water measured in inches per hour.

(ccc) "Project Applicant" means the individual or entity submitting a Landscape Documentation Package 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.

(ddd) "Rain Sensor" or "Rain Sensing Shutoff Device" means a component which automatically suspends an irrigation event when it rains.

(eee) "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.

(fff) "Recreational Area" means areas dedicated to active play such as parks, sports fields, and golf courses where turf provides a playing surface.

(ggg) "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.

(hhh) "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 Appendix A, 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.

(iii) "Rehabilitated Landscape" means any re-landscaping project that requires a permit , plan check, or design review, meets the requirements of Section 10-12.03, 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.

(jjj) "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.

(kkk) "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.

(lll) "Soil Texture" means the classification of soil based on its percentage of sand, silt, and clay.

(mmm) "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.

(nnn) "Sprinkler Head" means a device which delivers water through a nozzle.

(ooo) "Static Water Pressure" means the pipeline or municipal water supply pressure when water is not flowing.

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

(qqq) "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.

(rrr) "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.

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

(ttt) "Water Conserving Plant Species" means a plant species identified as having a low plant factor.

(uuu) "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.

(vvv) "Watering Window" means the time of day irrigation is allowed.

(www) "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.

SEC. 10-12.05 COMPLIANCE WITH LANDSCAPE DOCUMENTATION PACKAGE.

(a) Prior to construction, the City shall:

(1) Provide the project applicant with the Article 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; and
(4) Issue a permit or approve the plan check or design review for the project applicant.

(b) Prior to construction, the project applicant shall:

(1) Submit a Landscape Documentation Package to the City.

(c) Upon approval of the Landscape Documentation Package by the City, 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; and

(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.

SEC. 10-12.06 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).

(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.

(6) Grading Design Plans.

SEC. 10-12.07 WATER EFFICIENT LANDSCAPE WORKSHEET.

(a) A project applicant shall complete the Water Efficient Landscape Worksheet which contains two sections (see 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 of 44.2 of Union City for City of Hayward 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, from 0.7 to 1.0 for high water use plants, 0.8 for cool season turf, and 0.6 for warm season turf.

(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 (ET adjustment factor) for Special Landscape Areas shall not exceed 1.0.

(c) Maximum Applied Water Allowance (MAWA) shall be calculated using the equation:

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

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)

SLA Special Landscape Area (square feet)

To convert from gallons per year to hundred-cubic-feet per year:
= MAWA/748 = hundred-cubic-feet per year (100 cubic feet = 748 gallons)

(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): Use 44.2
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)

SEC. 10-12.08 SOIL MANAGEMENT REPORT.

(a) In order to create drought resistant soil, reduce runoff and encourage healthy plant growth, a soil management report addressing soil attributes of the project site shall be completed by the project applicant or his/her designee.

(b) The soil management report shall address the soil attributes of the project site and shall include:

(1) Identification of areas of quality topsoil to be protected during construction and/or critical soil limitations such as compaction; water logged soils or wetlands; thin, eroded or erosion prone soils.

(2) A laboratory soil analysis of the soil(s) into which plantings are to be made:

(A) Soil sampling shall be conducted in accordance with laboratory protocol, including protocols regarding adequate sampling depth for the intended plants.

(B) At a minimum the soil analysis shall 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) Essential nutrients;

(7) Percent organic matter; and

(8) Recommendations for soil amendments or nutrient applications to ameliorate the soil limitations identified by the analysis and the amount of compost required to bring the soil organic matter content to a minimum 3 inches. The required practice of adding compost is waived if the plant palette primarily includes California native species that are adapted to soils with little or no organic matter as documented by a published plant reference.

(C) It is required that:

(1) The lab report recommendations are based on an "organic" approach to soil and landscape management that specifies natural and non-synthetic fertilizers to rectify any soil deficiencies.

(2) If the soils are to be irrigated with recycled water the lab report recommendations are tailored to recycled water.

(3) The types of plantings intended such as turf, perennial bed, annual bed, swale etc are provided to the soil laboratory.

(4) Management actions are identified to remediate limiting soil characteristics such as ripping the soil to alleviate soil compaction.

(3) Specifications for protecting topsoil, ameliorating soil limitations, such as ripping the soil to alleviate soil compaction, and incorporating compost and/or amendments as per recommendations in the soil analysis report.

(c) The project applicant, or his/her designee, shall submit the soil management report as part of the Landscape Documentation Package.

(d) The soil management 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.

(e) The project applicant, or his/her designee, shall submit documentation verifying implementation of soil management report recommendations to the City with Certificate of Completion.

SEC. 10-12.09 LANDSCAPE DESIGN PLAN.

(a) A landscape design plan meeting the following design criteria shall be submitted as part of the Landscape Documentation Package.

(1) Plant Material.

(A) The estimated total water use of the plant material selected shall not exceed the Maximum Applied Water Allowance.

(B) Each hydrozone shall have plant materials with similar water use.

(C) At least 75% of the total number of plants in non-turf areas shall require occasional, little or no summer water. All species should be adapted to the climate in which they will be planted, as documented by a published plant reference. If plants are given a range of water needs from "occasional to moderate" for example, the landscape designer must determine if the plant will require either occasional or moderate watering based on site, soil, and climate conditions and categorize the plant appropriately. Sources used to determine climate adaptation and watering requirements may include:

(1) Bornstein, Carol, David Fross and Bart O'Brien, California Native Plants for the Garden.
Qualifying irrigation designation: "occasional", "infrequent", or "drought tolerant".

(2) East Bay Municipal Utility District's publication Plants and Landscapes for Summer Dry Climates.
Qualifying irrigation designation: "occasional", "infrequent" or "no summer water".

(3) Sunset Publishing Corporation Sunset Western Garden Book.
Qualifying irrigation designation: "little or no water".

(4) University of California Cooperative Extension's Guide to Estimating Irrigation Water Needs of Landscape Plantings in CA.
Qualifying irrigation designation: "Low" or "Very Low".

(D) Turf shall not be allowed on slopes greater than 25% where the toe of the slope is adjacent to an impermeable hardscape.

(E) Total irrigated areas specified as turf shall be limited to a maximum of 25% with recreational areas exempted.

(F) 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.

(G) Those species identified by CAL-IPC as invasive in the San Francisco Bay Area shall not be specified.

(H) 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.

(I) Plants shall be selected and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site:

(1) Protection and preservation of native species and natural vegetation.

(2) Selection of plants based on disease and pest resistance.

(3) Selection of trees based on applicable local tree ordinances or tree shading guidelines.

(4) Selection of California native plants from local and regional landscape program plant lists using local natural plant communities as models.

(5) Use of 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.

(6) 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]; to allow them to grow to their mature size within the space allotted them to avoid shearing and topping.

(7) Consider the solar orientation for plant placement to maximize summer shade and winter solar gain.

(8) Avoid specifying turf in street medians, traffic islands or bulbouts of any size unless irrigated with subsurface or low volume irrigation.

(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 unless a written exemption has been granted by the City stating that recycled water meeting all public health codes and standard is not available and will not be available for the foreseeable future.

(C) Surface area of a water feature shall be included in the high water use hydrozone area of the water budget calculation.

(D) Covers are required for pool and spa.

(3) Mulch and Amendments.

(A) A minimum three inch (3") layer of recycled chipped wood mulch in Dark Brown color, or organic green waste shall be applied on all exposed soil surfaces of planting areas except in turf areas, or direct seeding applications where mulch is contraindicated.

(B) Stabilizing mulching products shall be used on slopes. It is required that bio based products are used, and petroleum based products are not allowed.

(C) The mulching portion of the seed/mulch slurry in hydro-seeded applications shall meet the mulching requirement.

(D) Compost and soil amendments shall be incorporated according to recommendations of the soil report into minimum first 9 inches of soil in the entire planting areas unless otherwise directed in the soil report (see Section 10-12.08).

(E) Compost is purchased from processors who participate in the US Composting Council's Standard Testing Assurance Program.

(F) Ongoing maintenance shall maintain a minimum of (3") mulch.

(b) The landscape design plan, at a minimum, shall identify:

(1) Each hydrozone by number, letter, or other method;

(2) 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) Recreational areas;

(4) Areas permanently and solely dedicated to edible plants;

(5) Areas irrigated with recycled water that meet all applicable City and State laws;

(6) Type of mulch and application depth;

(7) Soil amendments, type, and quantity;

(8) Type and surface area of water features;

(9) Hardscapes (pervious and non-pervious);

(10) Location and installation details of any applicable stormwater best management practices, but are not limited to:

(A) rain gardens, 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) Any applicable rain harvesting or catchment technologies (e.g., cisterns, etc.);

(12) Contain the following statement: "I have complied with the criteria of the City of Hayward Bay-Friendly Water Efficient Landscape Ordinance, Hayward Municipal Code, Chapter 10, Article 12, and applied them for the efficient use of water in the landscape design plan"; and

(13) The signature of a licensed landscape architect, 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.)

SEC. 10-12.10 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.

(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.

(G) High flow sensors (flow meters) that detect and report high flow conditions created by system damage or malfunction shall be required.

(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 the Maximum Applied Water Allowance.

(L) In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.

(M) Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.

(N) Sprinkler spacing shall be designed to achieve head to head coverage and the highest possible distribution uniformity using the manufacturer's recommendations.

(O) Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to high traffic areas.

(P) Check valves or anti-drain valves are required for all irrigation systems.

(Q) 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.

(R) 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. 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). Prevention of overspray and runoff must be confirmed during the irrigation audit.

(S) Slopes greater than 25% shall not be irrigated with an irrigation system with a precipitation rate exceeding 0.65 inches per hour. The irrigation controller shall be programmed to "cycle and soaking" in a manner that the precipitation rate applied matches the infiltration rate. 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) 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 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, high flow sensor and backflow prevention devices;

(3) Static water pressure at the point of connection to the City's 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: landscapes using recycled water are considered Special Landscape Areas. The ET Adjustment Factor for Special Landscape Areas shall not exceed 1.0;

(6) The following statement: "I have complied with the criteria of the City of Hayward Bay-Friendly Water Efficient Landscape Ordinance, Hayward Municipal Code, Chapter 10, Article 12, 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, 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.)

SEC. 10-12.11 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 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 City of Hayward Bay-Friendly Water Efficient Landscape Ordinance, Hayward Municipal Code, Chapter 10, Article 12, 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.

SEC. 10-12.12 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, or the signer of the irrigation design plan, or the licensed landscape contractor when permitted by the City 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:

(4) Landscape and irrigation maintenance schedule;

(5) Irrigation audit report; and

(6) Soil management report, if not submitted with Landscape Documentation Package, and documentation verifying implementation of soil report recommendations.

(b) The project applicant shall submit the signed Certificate of Completion to the City prior to requesting a landscape inspection;

(c) The City staff shall perform a final inspection upon receipt of Certificate of Completion. Building permit final approval shall not be completed until the landscape inspection is approved as follows:

(1) Receive the signed Certificate of Completion from the project applicant;

(2) Perform a landscape field inspection verifying implementation of the approved landscape and irrigation plans and soil report recommendations; and

(3) Sign the permit card upon the field verification.

SEC. 10-12.13 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 9:00 p.m. and 8:00 a.m. unless weather conditions prevent it. 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 and mulch depth;

(I) Slope factor setting;

(J) Shade factor setting; and

(K) Irrigation uniformity or efficiency setting.

SEC. 10-12.14 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. The following are highly recommended:

(1) Use the "Bay-Friendly Landscape Model Maintenance Specifications" and the "Bay-Friendly Landscape Guidelines" as an official reference documents in the landscape maintenance contract and/or with on-site landscape staff.

(2) At least one landscaping staff member or contactor should be trained in the use of IPM or is a "Bay-Friendly Qualified landscape Professional."

SEC. 10-12.15 IRRIGATION AUDIT, SURVEY, AND 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:

(1) The project applicant shall submit an irrigation audit report with the Certificate of Completion to the City 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 City 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.

SEC. 10-12.16 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. Examples include:

(1) Rain gardens, infiltration beds, swales and basins that allow water to collect and soak into the ground;

(2) Constructed wetlands and retention ponds that retain water, handle excess flow and filter pollutants; and

(3) Pervious or porous surfaces (e.g., permeable pavers or blocks, pervious or porous concrete, etc.) that minimize runoff.

(b) Rain harvesting or catchment technologies such as cisterns are recommended for storage and use of rainwater to satisfy a percentage of the landscape irrigation requirements.

(c) Project applicants shall refer to Regional Water Quality Control Board for information on any applicable stormwater ordinances and stormwater management plans.

SEC. 10-12.17 PUBLIC EDUCATION.

(a) 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 Article.

(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.

SEC. 10-12.18 IRRIGATION AUDIT, SURVEY, AND WATER USE ANALYSIS FOR EXISTING LANDSCAPES.

(a) This section shall apply to all existing landscapes that were installed before January 1, 2010, are over one acre in size, and exceed the applicable Maximum Applied Water Allowance.

(1) For all landscapes that have a water meter, the City 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 that do not have a separate irrigation water meter, the City 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.

SEC. 10-12-19 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)].

Appendices.

Appendix A. REFERENCE EVAPOTRANSPIRATION (ETO) TABLE*

County and City ALAMEDA	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
Fremont	1.5	1.9	3.4	4.7	5.4	6.3	6.7	6.0	4.5	3.4	1.8	1.5	47.0
Livermore	1.2	1.5	2.9	4.4	5.9	6.6	7.4	6.4	5.3	3.2	1.5	0.9	47.2
Oakland	1.5	1.5	2.8	3.9	5.1	5.3	6.0	5.5	4.8	3.1	1.4	0.9	41.8
Oakland Foothills	1.1	1.4	2.7	3.7	5.1	6.4	5.8	4.9	3.6	2.6	1.4	1.0	39.6
Pleasanton	0.8	1.5	2.9	4.4	5.6	6.7	7.4	6.4	4.7	3.3	1.5	1.0	46.2
Union City	1.4	1.8	3.1	4.2	5.4	5.9	6.4	5.7	4.4	3.1	1.5	1.2	44.2

* The values in this table were derived from:

1) California Irrigation Management Information System (CIMIS);
2) Reference Evapo Transpiration Zones Map, UC Dept. of Land, Air & Water Resources and California Dept. of Water Resources 1999;
3) Reference Evapotranspiration for California, University of Californian, Department of Agriculture and Natural Resources (1987) Bulletin 1922; and
4) Determining Daily Reference Evapotranspiration, Coorperative Extension UC Division of Agriculture and Natural Resources (1987), Publication Leaflet 21426.

Appendix B. WATER EFFICIENT LANDSCAPE WORKSHEET
This worksheet is filled out by the project applicant and it is a required element of the Landscape Documentation Package. Please complete all sections (A and B) of the worksheet.

SECTION A. HYDROZONE INFORMATION TABLE
Please complete the hydrozone table(s) for each hydrozone. Use as many tables as necessary to provide the square footage of landscape area per hydrozone.

Hydrozone*	Zone or Valve	Irrigation Method**	Area (Sq. Ft.)	% of Landscape Area
	Total			**100%**

**** Hydrozone***
HW = High Water Use Plants
MW = Moderate Water Use Plants
LW = Low Water Use Plants

***** Irrigation Method***
MS = Micro-spray
S = Spray
R = Rotor
B = Bubbler
D = Drip
O = Other

SECTION B. WATER BUDGET CALCULATIONS

Section B1. Maximum Applied Water Allowance (MAWA)

The project's Maximum Applied Water Allowance shall be calculated using this equation:

MAWA = (44.2) (0.62) [(0.7 x LA) + (0.3 x SLA)]

where:

MAWA	Maximum Applied Water Allowance (gallons per year)
ETo	44.2: ETo of Union City in Reference Evapotranspiration from Appendix A (inches per year)
0.7	ET Adjustment Factor (ETAF)
LA	Landscaped Area includes Special Landscape Area (square feet)
0.62	Conversion factor (to gallons per square foot)
SLA	Portion of the landscape area identified as Special Landscape Area (square feet)
0.3	The additional ET Adjustment Factor for Special Landscape Area (1.0 - 0.7 = 0.3)

Maximum Applied Water Allowance = _____gallons per year

Show calculations.

Effective Precipitation (Eppt)

If considering Effective Precipitation, use 25% of annual precipitation. Use the following equation to calculate Maximum Applied Water Allowance:

MAWA (44.2 – Eppt) (0.62) [(0.7 x LA) + (0.3 x SLA)]

Maximum Applied Water Allowance = _____gallons per year

Show calculations.

The project's Estimated Total Water Use is calculated using the following formula:

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

where:

ETWU	Estimated total water use per year (gallons per year)
ETo	44.2 ETo of Union City in Reference Evapotranspiration (inches per year)
PF	Plant Factor from WUCOLS (see Definitions)
HA	Hydrozone Area [high, medium, and low water use areas] (square feet)
SLA	Special Landscape Area (square feet)
0.62	Conversion Factor (to gallons per square foot)
IE	Irrigation Efficiency (minimum 0.71)

Hydrozone Table for Calculating ETWU

Please complete the hydrozone table(s). Use as many tables as necessary.

Hydrozone	Plant Water Use Type(s)	Plant Factor (PF)	Area (HA) (square feet)	PF x HA (square feet)
			Sum	
	SLA			

Estimated Total Water Use = _____gallons

TABLE A - Plant Factors (PF) Based on WUCOLS			**TABLE B - Irrigation Efficiency (IE)**	
Cool Season Turf	0.8		Bubblers	0.85
Warm Season Turf	0.6		Drip Emitters	0.85
High Water Use Plants	0.7 – 1.0		Stream Sprinklers (in planter strips 8 feet or wider)	0.75
Moderate Water Use Plants	0.4 – 0.6		Spray Sprinklers (in planter strips 8 feet or wider)	0.625
Low Water Use Plants	0.1 – 0.3		Subsurface	0.85

Appendix C. CERTIFICATE OF COMPLETION
This certificate is filled out by the project applicant upon completion of the landscape project.

PART 1. PROJECT INFORMATION SHEET

Date	Permit No.	
Project Name	Project Address	
Name of Project Applicant	Telephone No.	
	Fax No.	
Title	Email Address	
Company	Street Address	
City	State	Zip Code

Property Owner or his/her designee:

Name	Telephone No.	
	Fax No.	
Title	Email Address	
Company	Street Address	
City	State	Zip Code

"I/we certify that I/we have received copies of all the documents within the Landscape Documentation Package and the Certificate of Completion and that it is our responsibility to see that the project is maintained in accordance with the Landscape and Irrigation Maintenance Schedule."

Property Owner Signature Date

PART 2. CERTIFICATION OF INSTALLATION ACCORDING TO THE LANDSCAPE DOCUMENTATION PACKAGE

"I/we certify that based upon periodic site observations, the work has been substantially completed in accordance with the ordinance and that the landscape planting and irrigation installation conform with the criteria and specifications of the approved Landscape Documentation Package."

Signature*	Date	
Name (print)	Telephone No.	
Title	Email Address	
License No. or Certification No.		
Company	Street Address	
City	State	Zip Code

*Signer of the landscape design plan, signer of the irrigation plan, or a licensed landscape contractor when permitted by the City.

PART 3. IRRIGATION SCHEDULING
Attach parameters for setting the irrigation schedule on controller.

PART 4. SCHEDULE OF LANDSCAPE AND IRRIGATION MAINTENANCE
Attach schedule of Landscape and Irrigation Maintenance.

PART 5. LANDSCAPE IRRIGATION AUDIT REPORT
Attach Landscape Irrigation Audit Report.

PART 6. SOIL MANAGEMENT REPORT
Attach soil management report, if not previously submitted with the Landscape Documentation Package.

Attach documentation verifying implementation of recommendations from soil analysis report. "

Section 2. SEVERABILITY. Should any part of this ordinance be declared by a final decision by a court or tribunal of competent jurisdiction to be unconstitutional, invalid, or beyond the authority of the City, such decision shall not affect the validity of the remainder of this ordinance, which shall continue in full force and effect, provided that the remainder of the ordinance, absent the unexcised portion, can be reasonably interpreted to give effect to the intentions of the City Council.

Section 3. EFFECTIVE DATE. In accordance with the provisions of Section 620 of the City Charter, this ordinance shall become effective 30 days from and after the date of its adoption.

IN COUNCIL INTRODUCED at a regular meeting of the City Council of the City of Hayward, held the 1st day of December, 2009, by Council Member Henson.

ADOPTED at a regular meeting of the City Council of the City of Hayward held the 15th day of December, 2009, by the following votes of members of said City Council.

AYES: COUNCIL MEMBERS: Zermeño, Quirk, Halliday, Dowling, Henson
MAYOR: Sweeney

NOES: COUNCIL MEMBERS: May

ABSENT: COUNCIL MEMBERS: None

ABSENT: COUNCIL MEMBERS: None

APPROVED: _____
Mayor of the City of Hayward

DATE: December 23, 2009

ATTEST: _____
City Clerk of the City of Hayward

APPROVED AS TO FORM:

_____
City Attorney of the City of Hayward

12/22/09 11:14 CLK

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Miriam Lens,777 B St.
Hayward CA 94541

PROOF OF PUBLICATION

FILE NO. Water Efficient Land

In the matter of

The Daily Review

I( )a citizen of the United States; I am over the age of eighteen ye), and not a party to or interested in the above-entitled matter. I am the Legal Advertising Clerk of the printer and publisher of The Daily Review, a newspaper published in the English language in the City of Hayward, County of Alameda, State of California.

I declare that the Daily Review is a newspaper of general circulation as defined by the laws of the State of California as determined by this court's decree, dated March 2, 1950, in the action entitled In the Matter of the Ascertainment and Establishment of the Standing of The Daily Review as a Newspaper of General Circulation, case number 221938. Said decree states that "'The Daily Review' has been established, printed, and published daily in the City of Hayward, County of Alameda, State of California, for one year or more next preceding the date of the filing of said petition; that it is a newspaper published for the dissemination of local and telegraphic news and intelligence of a general character and has a bona fide subscription list of paying subscribers; ... [] [and] THEREFORE, ... 'The Daily Review' is hereby determined and declared to be a newspaper of general circulation [within the meaning of Government C) §§ 6000 et seq.]" Said decree has not been revoked, vacated or set aside.

I declare that the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

12/12/2009

I certify (or declare) under the penalty of perjury that the foregoing is true and correct.

Hanene Seife

Public Notice Advertising Clerk

Legal No. 0003388212/09 11:14 CLK

PUBLIC NOTICE OF
AN INTRODUCTION OF AN ORDINANCE
BY THE CITY COUNCIL OF THE CITY OF HAYWARD

ORDINANCE REPEALING AND REPLACING CHAPTER 10 ARTICLE 12 OF THE HAYWARD MUNICIPAL CODE RELATING TO WATER EFFICIENT LANDSCAPE ORDINANCE

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

Section 1. Upon the effective date of this ordinance, Chapter 10, Article 12, of the Hayward Municipal Code is hereby repeated and, in substitution thereof, and a new Article 12 of Chapter 10 of the Hayward Municipal Code is hereby enacted to read in full as follows:

ARTICLE 12
CITY OF HAYWARD BAY-FRIENDLY
WATER EFFICIENT LANDSCAPE ORDINANCE

Section	Subject Matter
10-12.01	AUTHORITY
10-12.02	PURPOSE
10-12.03	APPLICABILITY
10-12.04	DEFINITIONS
10-12.05	COMPLIANCE WITH LANDSCAPE DOCUMENTATION PACKAGE
10-12.06	ENFORCEMENT
10-12.07	LANDSCAPE DOCUMENTATION PACKAGE
10-12.08	WATER EFFICIENT LANDSCAPE WORKSHEET
10-12.09	SOIL MANAGEMENT REPORT
10-12.10	LANDSCAPE DESIGN PLAN
10-12.11	IRRIGATION DESIGN PLAN
10-12.12	GRADING DESIGN PLAN
10-12.13	CERTIFICATE OF COMPLETION
10-12.14	IRRIGATION SCHEDULING
10-12.15	LANDSCAPE AND IRRIGATION MAINTENANCE SCHEDULE
10-12.16	IRRIGATION AUDIT, SURVEY, AND WATER USE ANALYSIS
10-12.17	STORMWATER MANAGEMENT
10-12.18	PUBLIC EDUCATION
10-12.19	IRRIGATION AUDIT, SURVEY, AND WATER USE ANALYSIS FOR EXISTING LANDSCAPES
10-12.20	EFFECTIVE PRECIPITATION
APPENDICES	
APPENDIX A.	REFERENCE EVAPOTRANSPIRATION TABLE
APPENDIX B.	WATER EFFICIENT LANDSCAPE WORKSHEET
SECTION A.	HYDROZONE INFORMATION TABLE
SECTION B.	WATER BUDGET CALCULATIONS
APPENDIX C.	CERTIFICATE OF COMPLETION

Section 2. SEVERABILITY. Should any part of this ordinance be declared by a final decision by a court or tribunal of competent jurisdiction to be unconstitutional, invalid, or beyond the authority of the City, such decision shall not affect the validity of the remainder of this ordinance, which shall continue in full force and effect, provided that the remainder of the ordinance, absent the unexcised portion, can be reasonably interpreted to give effect to the intentions of the City Council.

Section 3. EFFECTIVE DATE. In accordance with the provisions of Section 620 of the City Charter, this ordinance shall become effective 30 days from and after the date of its adoption.

Introduced at a meeting of the Hayward City Council held December 1, 2009, the above-entitled ordinance was introduced by Council Member Henson.

This ordinance will be considered for adoption at the next meeting of the Hayward City Council, to be held on December 15, 2009, at 8:00 p.m., in the Council Chamber, 777 B Street, Hayward, California. The full text of this ordinance is available for examination by the public in the office of the City Clerk.

Dated: December 12, 2009
Miriam Lens, City Clerk
City of Hayward

PUBLIC NOTICE OF
AN INTRODUCTION OF AN ORDINANCE BY
THE CITY COUNCIL OF THE CITY OF HAYWARD

AN ORDINANCE AMENDING ARTICLE 22 OF CHAPTER 10 OF THE HAYWARD MUNICIPAL CODE ESTABLISHING GREEN BUILDING REQUIREMENTS FOR PRIVATE DEVELOPMENT

THE CITY COUNCIL OF THE CITY OF HAYWARD DOES ORDAIN AS FOLLOWS:

Section 1. Purpose
Section 2. Findings
Section 3. Findings Required by California Health & Safety Code Section 17958.5
Section 4. The City of Hayward's Municipal Code is hereby amended to repeal Article 22 of Chapter 10 in its entirety and replace it with the following:

GREEN BUILDING REQUIREMENTS FOR PRIVATE DEVELOPMENT
SECTION 10-22.100 TITLE
SECTION 10-22.110 DEFINITIONS
SECTION 10-22.120 APPLICATION
SECTION 10-22.130 ALTERNATIVE GREEN BUILDING REQUIREMENTS
SECTION 10-22.140 STANDARDS FOR COMPLIANCE

SECTION 10-22.160 PROMULGATION OF IMPLEMENTING REGULATIONS
SECTION 10-22.160 COST EFFECTIVENESS STUDY

Section 5. SEVERANCE. Should any part of this ordinance be declared by a final decision by a court or tribunal of competent jurisdiction to be unconstitutional, invalid, or beyond the authority of the City, such decision shall not affect the validity of the remainder of this ordinance, which shall continue in full force and effect, provided that the remainder of the ordinance, absent the unexcised portion, can be reasonably interpreted to give effect to the intentions of the City Council.

Section 6. ANNUAL REVIEW. The City Council shall review this ordinance at least annually to determine whether it needs to be updated because of new legislation enacted by the State or new standards developed by the California Energy Commission, or other applicable organizations, such as StopWaste.org, Build It Green, and LEED (Leadership in Energy and Environmental Design). The Building Official shall annually report to the City Manager the number and types of projects built under this ordinance.

Section 7. In accordance with the provisions of Section 620 of the City Charter, this ordinance shall become effective thirty days after adoption.

Introduced at a meeting of the Hayward City Council held November 3, 2009, the above-entitled ordinance was introduced by Council Member Henson. This ordinance will be considered for adoption at the next meeting of the Hayward City Council, to be held on December 15, 2009, at 8:00 p.m., in the Council Chamber, 777 B Street, Hayward, California. The full text of this ordinance is available for examination by the public in the office of the City Clerk.

DATED: December 12, 2009
Miriam Lens, City Clerk
City of Hayward

DR #3338821
Dec. 12, 2009