ALAMEDA COUNTY COMMUNITY DEVELOPMENT AGENCY
PLANNING DEPARTMENT

STAFF REPORT

TO: PLANNING COMMISSION

HEARING DATE: May 07, 2012

GENERAL INFORMATION

PROPOSAL: Consideration of an Ordinance to codify the statewide Water Efficient Landscape Ordinance requirements and to adopt policies to promote Bay Friendly Landscape Basics practices tailored to protect water quality and the environment in the San Francisco Bay Region.

APPLICANT: County-Initiated Ordinance

ZONING: All zoning districts within Unincorporated Alameda County would be affected

GENERAL PLAN DESIGNATION: All general plan land use designations within Unincorporated Alameda County would be affected

RECOMMENDATION

Staff recommends that the Planning Commission review the report and the attached draft ordinance language, take public testimony and recommend adoption of the Categorical Exemption for this project, and recommend approval of option 1 to the Board of Supervisors. If the Planning Commission votes that the Bay Friendly Landscape Basics practices should be recommendations instead of regulations, then the Planning Commission may recommend option 2 to the Board of Supervisors.

BACKGROUND

Background and Rationale for Proposed Amendments

WATER EFFICIENT LANDSCAPE ORDINANCE

Alameda County adopted the California Water Efficient Landscape Ordinance (WELO) by default with the statewide adoption of said ordinance on January 1, 2010. The proposed County ordinance update would formally add those measures from WELO into the Zoning Ordinance in order to reduce confusion for developers and public agencies. WELO's standards are applicable to the following projects:

- Public agency or private developer-installed commercial projects that require a permit and result in an increase of 2,500 square feet or more of irrigated landscape

- Developer-installed single- or multi-family residential projects that require a permit and result in an increase of 2,500 square feet or more of irrigated landscape

- Homeowner-installed single-family residential projects that require a permit and result in an increase of 5,000 square feet or more of irrigated landscape.

The Cal Green Ordinance, adopted by Alameda County, and incorporated into section 15.08 of the Alameda County Ordinance, also directs landscaping projects to follow WELO, where applicable.

Basically, WELO does the following:

To minimize the inefficient use of water in new and rehabilitated landscapes, this ordinance prescribes the use of drought tolerant and low water use plants for the largest landscaped areas, with high water use plants designated for accent areas. Turf is minimized, with the exception of sport fields and other uses that require turf for their use. Landscape development packages that are compliant with WELO will include irrigation plans and scheduling that group plants with similar water needs into specific hydrozones. Using the methods prescribed by WELO, the licensed landscape architect can show how the landscape will comply with the ordinance.

BAY FRIENDLY LANDSCAPE BASICS

Bay-Friendly Landscaping is a holistic approach to gardening and landscaping that works in harmony with the natural conditions of the San Francisco Bay Watershed. Bay-Friendly landscapes can provide a sense of place and are suited to the local climate, soils, and topography. Appropriately chosen and placed plants have greater pest resistance, require less care, use fewer resources, and generate less waste. The use of Bay-Friendly landscaping techniques can also help meet recycling goals set regionally and statewide.

In Alameda County, the organization StopWaste.Org has developed Bay-Friendly Landscape Guidelines for professional landscapers and a Bay Friendly Gardening Guide for residents. StopWaste.Org is the Alameda County Waste Management Authority and the Alameda County Source Reduction and Recycling Board operating as one public agency.

To promote sustainability and economic and environmental health throughout the unincorporated areas, the County should implement the nine Bay-Friendly Basics practices. These practices represent the nine required practices in the Bay-Friendly Landscape Scorecard for rated landscapes. Landscapes that implement the "Basics" will achieve significant environmental benefits for the project and community. StopWaste.Org has quantified the benefits from these nine Bay-Friendly practices to result in:

- Water savings of an average of 50% or more
- Reducing stormwater runoff by 73% or more
- Reducing plant debris by 40% or more
- Reducing maintenance time up to 70%
- Reducing Greenhouse Gasses up to 53.5 tons of CO2E per acre/per year (that's equal to 10 passenger cars' annual commute)

The "Basics" are designed by StopWaste.Org to be the new minimum environmental requirement for landscape projects that trigger a permit. Also, since the Bay-Friendly Basics are a subset of the more comprehensive Bay-Friendly Landscape Scorecard, projects can voluntarily consider taking the next step and qualify as a Bay-Friendly Rated Landscape by earning a minimum of 60 points on the Bay-Friendly

Landscape Scorecard, encouraging even more sustainable development in the County. Alameda County has already adopted the higher Bay-Friendly standard for County capital projects, which has resulted in the Castro Valley Library being a Bay-Friendly Rated Landscape and the Stanley Boulevard redevelopment project, which is under construction and is expected to be a Bay-Friendly Rated Landscape with a score of nearly 100 points. StopWaste.org has worked with 50 projects inside the greater Alameda County area over several years encompassing 200 acres in a wide variety of project types that have all achieved these basic practices as well as earn 60 points or more on the Bay-Friendly Landscape Scorecard.

Basics practices are also in line and compatible with recently-adopted County Climate Action Plan policy measures, specifically, those strategies requiring new landscape projects to reduce potable water use by 40 percent, and the increase in solid waste reduction and diversion to 90 percent by 2030. These same Bay Friendly Basic practices are also being adopted by at least 13 out of the 15 jurisdictions within Alameda County that have land use authority, by June 2012.

For public and privately-developed landscapes of certain threshold areas, this ordinance would require the implementation of the following nine Bay-Friendly landscape practices (called Bay Friendly Landscapes Basics Checklist).

1. Three Inches of Mulch on Non-Turf Areas
2. Amend the Soil with Compost prior to Planting
3. Reduce and Recycle Landscape Construction Waste
4. Choose and Locate Plants to Grow to Natural Size
5. Do Not Plant Invasive Plant Species
6. Grow Drought Tolerant California Native, Mediterranean or Climate Adapted Plants
7. Minimize the Lawn to 25% of Landscaped Areas, with Sports and Multiple-use Fields Exempted
8. Specify Weather-Based Irrigation Controllers
9. No Sprinkler & Spray Heads for Areas Less Than 8 Feet Wide

The Bay Friendly Basics Checklist applies to the same project thresholds that are applicable to WELO: to Public agency or private developer-installed projects that require a permit with 2,500 square feet or more of landscaped area, developer-installed single- or multi-family residential projects that require a permit with 2,500 square feet or more of landscaped area, and homeowner-provided landscapes that require a permit with 5,000 square feet or more of landscaped area.

Five cities within Alameda County (Emeryville, Fremont, San Leandro, Hayward, Livermore), have adopted the Bay Friendly Landscaping version of the State WELO. Other jurisdictions are currently in the process of updating their ordinances to include the nine Bay Friendly Landscaping Basics. Adoption of Bay-Friendly programs throughout the San Francisco Bay Area is promoted by the loosely-affiliated Bay Friendly Landscaping and Gardening Coalition as a way to increase regional awareness and design toward more sustainable landscaping installations around the San Francisco Bay.

Three of the nine strategies listed above are already required either by the Alameda County Green Building Ordinance (Ordinance Section 15.08, item #3) or the statewide WELO (items #8 and #9). The prescriptive Bay-Friendly measures represent a comprehensive whole systems approach that addresses soil health and regional water quality in addition to the requirements of WELO.

CONFORMANCE WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

The adoption of this ordinance is exempt from the California Environmental Quality Act pursuant to California Code of Regulations, Title 14, Chapter 3, Section 15308 (Class 8, actions by regulatory

agencies, as authorized by local ordinance, to assure the maintenance, restoration, enhancement or protection of the environment where the regulatory process involves procedures for protection of the environment).

OTHER IMPACTS

Fiscal Impact to Developers

While the incorporation of these Bay-Friendly Basics might mean an increase in the costs of landscape design and construction, post installation, maintenance costs would in most cases decrease, relative to landscapes not incorporating Bay Friendly Principles. Plant spacing requirements to reduce overplanting can reduce the cost of the project. The reduction in needs for water, mowing trimming and disposing of plant debris would result in long-term savings in labor, water, and energy. As an example, approximately 10,000 gallons of water per dry season can be saved through the reduction in area from 1,000 to 500 square feet a lawn that receives 1 inch of water per week. Water rates are expected to increase over time and stricter water budgets will be reflected in tiered pricing structures. These Bay-Friendly Basic practices will allow property owners to avoid the higher priced tiered rates, saving more money over time. Further, American Water Works Association has estimated that overwatering causes 85% of all landscape problems, such as erosion, plant disease and mortality. Also preventing overspray extends the lifetime of paving, asphalt, fencing and other structures which are affected. Using compost, mulch and climate adapted plants make landscapes more resilient to future drought and climate change. While there may be some additional cost involved in recycling construction material waste, costs can be offset at least in part from the reduced needs to transport new and discarded materials.

Fiscal Impact to the County

Alameda County receives Waste Import Mitigation Funds on a per-ton fee basis from the City and County of San Francisco in exchange for disposing of its waste at the Altamont Landfill operated by Waste Management, Incorporated. The Waste Import Mitigation fund is a pass-through from the Waste Management Authority (StopWaste.Org) which allocates the moneys to the various cities, utility districts, and the unincorporated County within Alameda County.

The Waste Management Authority (StopWaste.Org) has received Waste Import Mitigation fee payments from the City and County of San Francisco since the mid 1980's. The Authority began in the mid 1990's to allocate revenues to member agencies and jurisdictions within Alameda County. The amount of this allocation was increased from $1M to $1.1M for fiscal year FY 07/08. While the monies in this fund are distributed to jurisdictions throughout Alameda County, the unincorporated area has historically received about $40,000 per annum. In order to continue to receive reduced funding in the amount of $30,000 for the fiscal year FY 11/12, the County must adopt by June 30, 2012, the nine Bay-Friendly Basics described herein and in the attached ordinance amendment.

DISCUSSION OF ISSUES RAISED AT PUBLIC FORUMS

This Title 17 update has to date received consideration from the Ordinance Review Committee, the Sunol Citizen's Advisory Committee, the Castro Valley Municipal Advisory Council, the Agricultural Advisory Committee, and the Unincorporated Services Committee. Individual members of these bodies raised several issues and concerns, which are referenced below, with applicable answers in italics.

- Some worry that the proposed ordinance updates may have wide ranging applicability.
  Stated clearly in the draft ordinance, these requirements are applicable in cases where, in conjunction with either a Building Permit or a discretionary permit through Planning, there is a

plan for new or renovated irrigated landscape of an area meeting the threshold.

- Some perceive a lack of follow-up by county staff after landscape installation.
  County staff proposes performance standards with these ordinance updates, applicable where WELO and Bay friendly standards also apply, and designed to address the quality of landscape plans pre- and post-installation.

- Landscapes with drought tolerant vegetation do not appeal to the aesthetic that some people look for in a landscape and some see plantings of drought resistant bunch grasses as ugly monoculture.
  Water use is not an effective determination of whether or not a landscape is attractive. Both high and low water using landscapes can be attractive, or unattractive. There are many examples of Bay Friendly landscapes that are designed to look attractive. While turf is actually the prime example of a monoculture, there are many allowances and exceptions in this ordinance for recreation turf, beyond the 25% threshold. There is also a trend that natural landscapes are often seen as an upgrade to property values.

- Some question that the notion that there is a need to conserve water in California.
  Estimates, based on projected population growth, are that the State will face annual water shortages during years of regular rainfall by 2020, and increasing development will lead to diminishing opportunities for ground water recharge.

- Some have the perception that this ordinance will take away individual freedom to landscape as one chooses (i.e., with lawns)
  In addition to the hundreds of climate-adapted plants that meet this requirement in the Bay Area, Bay Friendly Basics allow for 25% of the plants to be high water users, and allow unlimited use of recreational turf.

- Some worry that the proposed updates would add to the cost burden for developers and property owners.
  Most of the costs associated with landscaping requirements, such as the engagement of landscape professionals, are already required by WELO. There are certain additional costs as well as great savings associated with the installation of Bay Friendly vs. traditional landscapes. An analysis of the costs of a traditional landscape versus a landscape designed in the manner of a sustainable landscape is attached.

- Some in the community prefer incentives rather than mandated requirements.
  In addition to the lack of a funding mechanism for incentives, the requirements in the attached ordinance would more effectively ensure achieving the goals of sustainable landscaping than an incentive program.

OPTIONS FOR ADOPTION

Staff has held various community meetings promoting adoption of WELO and Bay Friendly Landscapes Basics as regulations. The various community meetings had few people attending. However, of those attending, the majority of comments were in favor of adopting WELO as regulations, but adopting Bay Friendly Landscapes Basics practices as guidelines to encourage installation of sustainable landscapes rather than requiring installation. Therefore, staff is forwarding these two options to the Planning Commission for their consideration.

Option 1 (recommended by County staff and by StopWaste.org)

Adopt WELO and Bay Friendly Landscapes Basics as regulations. See Attachment A.

Option 2 (preferred by the majority of those few people who attended community meetings)

Adopt WELO as regulations, but adopt Bay Friendly Landscapes Basics practices as guidelines to encourage installation of sustainable landscapes rather than requiring installation. See Attachment B for WELO ordinance. Bay Friendly Landscapes Basics practices would be drafted as guidelines for adoption by the Board of Supervisors.

CONCLUSION

To streamline and clarify existing landscape development requirements for staff, and to better serve the community in a manner consistent with current measures and policies, staff proposes adoption of the included amendments to the Zoning Ordinance to reflect the WELO requirements already in effect. Staff also recommends adoption of the Bay Friendly Landscape Basics practices as an ordinance (option 1).

However, should the Planning Commission find that the Bay Friendly Landscape Basics are appropriate as recommendations and not mandates, staff recommends adoption of the WELO regulations as Zoning Ordinance amendments, but adoption of a policy resolution to implement the Bay Friendly Landscapes Basics as guidelines (option 2).

ATTACHMENTS

Attachment A Draft Ordinance including Bay Friendly Practices (option 1)

Attachment B Draft Ordinance without Bay Friendly Practices (option 2)

Attachment C Comparison table of BF Basic Practices and WELO

Attachment D Case Study Cost-Benefit analysis of Installation and Maintenance

PREPARED BY: Damien Curry Planner
REVIEWED BY: Rodrigo Orduña Senior Planner

WELO & BAY FRIENDLY BASICS DRAFT May 1, 2012

(Text in ***bold underline italics*** outlines the incorporation of Bay Friendly Basics, text in highlight the Performance Standards with the updated ordinance in response to committee input)

Chapter 17.64 – BAY FRIENDLY AND WATER EFFICIENT LANDSCAPE ORDINANCE

17.64.010 - Authority.

This Chapter 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.

17.64.020 - Purpose.

The Board of Supervisors 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 Chapter 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. To the extent that a conflict exists between this Chapter and other portions of the County Ordinance, the requirements of this Chapter shall control.

17.64.030 - Applicability.

A. After January 1, 2010, this Chapter shall apply to all of the following landscape projects:

1. New and rehabilitated landscapes for public agency projects and private commercial development projects that increase the area of irrigated landscape by an amount equal to or greater than 2,500 square feet and that are part of a project requiring a building permit, plan check or planning permit.

2. New and rehabilitated landscapes which are developer-installed for single-family and multi-family projects that increase the area of irrigated landscape by an amount equal to or greater than 2,500 square feet and that are part of a project requiring a building permit, plan check or planning permit.
3. New and rehabilitated landscapes that are homeowner provided or homeowner-hired in single-family and multi-family residential projects that increase the area of irrigated landscape by an amount equal to or greater than 5,000 square feet and that are part of a project requiring a building permit, plan check or planning permit.
4. Existing landscapes as limited by Section 17.64.180.
5. Cemeteries: Recognizing the special landscape management needs of cemeteries, new and rehabilitated cemeteries are governed by §§492.4, 492.11, and 492. 12 of the California Code of Regulations or successor document and existing cemeteries are governed by §§493, 493.1, and 493.2 of the California Code of Regulations or successor document.

B. This Chapter 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.

17.64.040 - Definitions.

The following words and phrases whenever used in this Chapter shall be construed as defined below.

Certificate of Completion: "Certificate of Completion" means the document required by Section 17.64.120.

Certified Landscape Irrigation Auditor: "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.

Compost: "Compost" 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.)

Drought Resistant Soil: "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)).

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

Established Landscape: "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.

Estimated Total Water Use: "Estimated Total Water Use" (ETWU) means the total water used for the landscape as described in Section 17.64.070.

ET Adjustment Factor: "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.

ETo: See Reference Evapotranspiration

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

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

Infiltration Rate: "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).

Integrated Pest Management: "Integrated Pest Management" (IPM) means a sustainable approach to managing pests that combines biological, cultural, physical and chemical tools in a way that minimizes economic, health, and environmental risks.

Irrigation Audit: "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.

Irrigation Efficiency: "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 Chapter is 0.71. Greater irrigation efficiency can be expected from well designed and maintained systems.

Irrigation Survey: "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.

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

Landscape Area: "Landscape Area" (LA) 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).

Landscape Project: "Landscape Project" means total area of landscape in a project as defined in "landscape area" for the purposes of this Chapter.

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

Maximum Applied Water Allowance: "Maximum Applied Water Allowance" (MAWA) means the upper limit of annual applied water for the established landscaped area as specified in Section 17.64.070. 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.

Mined-Land Reclamation Projects: "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.

Mulch: "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.

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

Overspray: "Overspray" means the irrigation water which is delivered beyond the target area.

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

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

Plant Factor: "Plant Factor" (PF) is a factor, when multiplied by ETo, estimates the amount of water needed by plants. For purposes of this Chapter, 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 Chapter are derived from the Department of Water Resources 2000 publication "Water Use Classification of Landscape Species".

Project Applicant: "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.

Record Drawings: "Record Drawings' 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.

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

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

Reference Evapotranspiration: "Reference Evapotranspiration" (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, 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.

Rehabilitated Landscape: "Rehabilitated Landscape" means any re-landscaping project that requires a permit, plan check, or design review, meets the requirements of Section 17.64.030, and the modified landscape area is equal to or greater than 2,500 square feet, is at least 50% of the total landscape area, and the modifications are completed within one year of application submittal.

Runoff: "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.

Water Feature: "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.

Watering Window: "Watering Window" means the time of day irrigation is allowed.

17.64.050 - Compliance with Landscape Documentation Package.

A. Prior to construction, the County Planning Department shall:
   1. Provide the project applicant with the Chapter 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 County Planning Department.

C. Upon approval of the Landscape Documentation Package by the County Planning Department, 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.

17.64.060 - Landscape Documentation Package.

The Landscape Document Package shall follow the requirements of §492.3 of the California Code of Regulations or successor document.

17.64.070 Water Efficient Landscape Worksheet.

A project applicant shall complete a Water Efficient Landscape Worksheet that meets the requirements of California Code of Regulations §492.4 or successor document.

17.64.080 - Soil Management Report.

The project applicant or designee shall complete a soil management report addressing soil attributes of the project site In order to create drought resistant soil, reduce runoff, and encourage healthy plant growth. The soil management report shall meet the requirements of California Code of Regulations §492.5 or successor document. The project applicant shall submit the report as part of the Landscape Documentation Package. The report shall be available to the professionals preparing the landscape design plans and irrigation design plans to make any necessary adjustments to the design plans. The project applicant shall submit documentation verifying implementation of soil management report recommendations to the County with the Certificate of Completion. ***This report shall require the amendment of the soil with compost in quantity sufficient to bring the soil organic matter content to a minimum of 3.5% by dry weight, or one inch of compost. Should the soil at the site meet the standard of 3.5% organic matter, then this requirement shall be waived.***

17.64.090 - Landscape Design Plan.

The project applicant shall submit a landscape design plan meeting the requirements of California Code of Regulations §492.6 or successor document as part of the Landscape Documentation Package. ~~In addition, this plan shall require the following:~~

A. This plan shall require the following:

1. All soil areas on the site shall be protected with a minimum of 3 inches of mulch after construction.

2. At least 50% by weight of all waste from landscape construction and demolition shall be incorporated into the new finished landscape.

3. To minimize shearing and green waste, appropriate sized plants shall be selected.

4. No plant species listed by CAL-IPC as invasive in the San Francisco Bay Area shall be included in this plan.

5. With the exemption of sports or multiple use areas, turf shall not exceed 25% of the total irrigated area.

B. This plan shall:

1. Screen infrastructure such as drains and catch basins with trees and shrubs to maintain a naturalized appearance
2. Install effective screening for areas of stormwater treatment areas with landscape plants, berms, or other natural features
3. Use of accent trees and shrubs.
4. Avoid homogeneous plantings in areas generally visible from the public right of way.
5. Specify installation of mature plants where feasible; shrubs and trees shall be installed at a size to serve intended screening purposes at time of installation
6. Specify the use a variety of landscape plants with respect to palette, height and dimension
7. Specify use of 60% of landscaping that does not go dormant during the summer periods

17.64.100 Irrigation Design Plan.

The project applicant shall submit an irrigation design plan meeting the requirements of California Code of Regulations §492.7 or successor document and the manufacturers' recommendations as part of the Landscape Documentation Package. The irrigation system and its related components shall be planned and designed to allow for proper installation, management, and maintenance. 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 requirements of California Code of Regulations §492.10 or successor document. In addition, this plan shall include the following:

a. Weather-based irrigation controllers that include moisture or rain sensor shutoffs shall be specified

b. Sprinkler and spray heads shall not be specified for areas that are less than eight feet in width.

17.64.110 - Grading Design Plan.

The project applicant shall submit a grading plan meeting the requirements of California Code of Regulations §492.8 or successor document designed to minimize soil erosion, runoff, and water waste as part of the Landscape Documentation Package. A comprehensive grading plan prepared by a civil engineer for permits satisfies this requirement.

17.64.120 - Certificate of Completion.

The project applicant shall submit a signed Certificate of Completion to the Planning Department prior to requesting a landscape inspection. The Certificate of completion shall meet the requirements the California Code of Regulations §492.9 or successor document. The Planning Department shall perform a final inspection upon receipt of the Certificate of Completion verifying implementation of the approved landscape and irrigation plans and soil report recommendations and, upon verification of conformance with the Chapter, sign the permit card.

17.64.130 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 document in the landscape maintenance contract and/or with on-site landscape staff.

2. At least one landscaping staff member or contractor should be trained in the use of Integrated Pest Management or is a "Bay-Friendly Qualified Landscape Professional."

E. After project completion and coincident with periodic stormwater quality inspections, the Planning Director shall inspect the installed landscape and may require modifications to the plantings and/or ground cover, if necessary, in order to:

1. Replant areas where dead or moribund plants are found
2. Effectively screen infrastructure such as but not limited to gratings, standpipes, and junction boxes
3. Effectively screen areas of bare dirt arising from plant mortality or deficiencies in plant growth or the landscape design

17.64.140 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 Water Supplier 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 Water Supplier 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.

17.64.150 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.

17.64.160 Public Education.

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

A. 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.

B. Information shall be provided about designing, installing, managing, and maintaining water efficient landscapes.

17.64.170 Irrigation Audit, Survey, and Water Use Analysis for Existing Landscapes.

A. This section shall apply to all existing landscapes that were installed before January I, 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 Water Supplier 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 Planning Department 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.

17.64.180 Effective Precipitation.

The County may consider Effective Precipitation as defined in the California Code of Regulations §494 or successor document in tracking water use.

H:\DPD\Ordinance Amendments\WELO and Bay Friendly Basics\Document\Chapter 17.64 Draft April 20, 2012

WELO – ONLY DRAFT May 1, 2012

(Text in highlight indicates Performance Standards incorporated with the updated ordinance)

Chapter 17.64 –WATER EFFICIENT LANDSCAPE ORDINANCE

17.64.010 - Authority.

This Chapter 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.

17.64.020 - Purpose.

The Board of Supervisors 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 Chapter is to establish a structure for planning, designing, installing, maintaining and managing water efficient landscapes in new construction and rehabilitated projects and establish provisions for water management practices and water waste prevention for existing landscapes. To the extent that a conflict exists between this Chapter and other portions of the County Ordinance, the requirements of this Chapter shall control.

17.64.030 - Applicability.

A. After January 1, 2010, this Chapter shall apply to all of the following landscape projects:

1. New and rehabilitated landscapes for public agency projects and private commercial development projects that increase the area of irrigated landscape by an amount equal to or greater than 2,500 square feet and that are part of a project requiring a building permit, plan check or planning permit.
2. New and rehabilitated landscapes which are developer-installed for single-family and multi-family projects that increase the area of irrigated landscape by an amount equal to or greater than 2,500 square feet and that are part of a project requiring a building permit, plan check or planning permit.
3. New and rehabilitated landscapes that are homeowner provided or homeowner-hired in single-family and multi-family residential projects that increase the area of irrigated landscape by an amount equal to or

greater than 5,000 square feet and that are part of a project requiring a building permit, plan check or planning permit.

4. Existing landscapes as limited by Section 17.64.180.
5. Cemeteries: Recognizing the special landscape management needs of cemeteries, new and rehabilitated cemeteries are governed by §§492.4, 492.11, and 492. 12 of the California Code of Regulations or successor document and existing cemeteries are governed by §§493, 493.1, and 493.2 of the California Code of Regulations or successor document.

B. This Chapter 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.

17.64.040 - Definitions.

The following words and phrases whenever used in this Chapter shall be construed as defined below.

Certificate of Completion: "Certificate of Completion" means the document required by Section 17.64.120.

Certified Landscape Irrigation Auditor: "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.

Compost: "Compost" 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.)

Drought Resistant Soil: "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)).

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

Established Landscape: "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.

Estimated Total Water Use: "Estimated Total Water Use" (ETWU) means the total water used for the landscape as described in Section 17.64.070.

ET Adjustment Factor: "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.

ETo: See Reference Evapotranspiration

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

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

Infiltration Rate: "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).

Integrated Pest Management: "Integrated Pest Management" (IPM) means a sustainable approach to managing pests that combines biological, cultural, physical and chemical tools in a way that minimizes economic, health, and environmental risks.

Irrigation Audit: "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.

Irrigation Efficiency: "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 Chapter is 0.71. Greater irrigation efficiency can be expected from well designed and maintained systems.

Irrigation Survey: "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.

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

Landscape Area: "Landscape Area" (LA) 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).

Landscape Project: "Landscape Project" means total area of landscape in a project as defined in "landscape area" for the purposes of this Chapter.

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

Maximum Applied Water Allowance: "Maximum Applied Water Allowance" (MAWA) means the upper limit of annual applied water for the established landscaped area as specified in Section 17.64.070. 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.

Mined-Land Reclamation Projects: "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.

Mulch: "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.

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

Overspray: "Overspray" means the irrigation water which is delivered beyond the target area.

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

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

Plant Factor: "Plant Factor" (PF) is a factor, when multiplied by ETo, estimates the amount of water needed by plants. For purposes of this Chapter, 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 Chapter are derived from the Department of Water Resources 2000 publication "Water Use Classification of Landscape Species".

Project Applicant: "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.

Record Drawings: "Record Drawings' 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.

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

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

Reference Evapotranspiration: "Reference Evapotranspiration" (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, 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.

Rehabilitated Landscape: "Rehabilitated Landscape" means any re-landscaping project that requires a permit, plan check, or design review, meets the requirements of Section 17.64.030, and the modified landscape area is equal to or greater than 2,500 square feet, is at least 50% of the total landscape area, and the modifications are completed within one year of application submittal.

Runoff: "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.

Water Feature: "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.

Watering Window: "Watering Window" means the time of day irrigation is allowed.

17.64.050 - Compliance with Landscape Documentation Package.

A. Prior to construction, the County Planning Department shall:
   1. Provide the project applicant with the Chapter 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 County Planning Department.

C. Upon approval of the Landscape Documentation Package by the County Planning Department, 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.

17.64.060 - Landscape Documentation Package.

The Landscape Document Package shall follow the requirements of §492.3 of the California Code of Regulations or successor document.

17.64.070 Water Efficient Landscape Worksheet.

A project applicant shall complete a Water Efficient Landscape Worksheet that meets the requirements of California Code of Regulations §492.4 or successor document.

17.64.080 - Soil Management Report.

The project applicant or designee shall complete a soil management report addressing soil attributes of the project site In order to create drought resistant soil, reduce runoff, and encourage healthy plant growth. The soil management report shall meet the requirements of California Code of Regulations §492.5 or successor document. The project applicant shall submit the report as part of the Landscape Documentation Package. The report shall be available to the professionals preparing the landscape design plans and irrigation design plans to make any necessary adjustments to the design plans. The project applicant shall submit documentation verifying implementation of soil management report recommendations to the County with the Certificate of Completion.

17.64.090 - Landscape Design Plan.

The project applicant shall submit a landscape design plan meeting the requirements of California Code of Regulations §492.6 or successor document as part of the Landscape Documentation Package. ~~In addition, this plan shall require the following:~~ This plan shall

A. Screen infrastructure such as drains and catch basins with trees and shrubs to maintain a naturalized appearance
B. Install effective screening for areas of stormwater treatment areas with landscape plants, berms, or other natural features
C. Use of accent trees and shrubs.
D. Avoid homogeneous plantings in areas generally visible from the public right of way.
E. Specify installation of mature plants where feasible; shrubs and trees shall be installed at a size to serve intended screening purposes at time of installation
F. Specify the use a variety of landscape plants with respect to palette, height and dimension
G. Specify use of 60% of landscaping that does not go dormant during the summer periods

17.64.100 Irrigation Design Plan.

The project applicant shall submit an irrigation design plan meeting the requirements of California Code of Regulations §492.7 or successor document and the manufacturers' recommendations as part of the Landscape Documentation Package. The irrigation system and its related components shall be planned and designed to allow for proper installation, management, and maintenance. 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 requirements of California Code of Regulations §492.10 or successor document.

17.64.110 - Grading Design Plan.

The project applicant shall submit a grading plan meeting the requirements of California Code of Regulations §492.8 or successor document designed to minimize soil erosion, runoff, and water waste as part of the Landscape Documentation Package. A comprehensive grading plan prepared by a civil engineer for permits satisfies this requirement.

17.64.120 - Certificate of Completion.

The project applicant shall submit a signed Certificate of Completion to the Planning Department prior to requesting a landscape inspection. The Certificate of completion shall meet the requirements the California Code of Regulations §492.9 or successor document. The Planning Department shall perform a final inspection upon receipt of the Certificate of Completion verifying implementation of the approved landscape and irrigation plans and soil report recommendations and, upon verification of conformance with the Chapter, sign the permit card.

17.64.130 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:

E. After project completion and coincident with periodic stormwater quality inspections, the Planning Director shall inspect the installed landscape and may require modifications to the plantings and/or ground cover, if necessary, in order to:

1. Replant areas where dead or moribund plants are found
2. Effectively screen infrastructure such as but not limited to gratings, standpipes, and junction boxes
3. Effectively screen areas of bare dirt arising from plant mortality or deficiencies in plant growth or the landscape design

17.64.140 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 Water Supplier 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 Water Supplier 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.

17.64.150 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.

17.64.160 Public Education.

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

A. 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.

B. Information shall be provided about designing, installing, managing, and maintaining water efficient landscapes.

17.64.170 Irrigation Audit, Survey, and Water Use Analysis for Existing Landscapes.

A. This section shall apply to all existing landscapes that were installed before January I, 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 Water Supplier 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 Planning Department 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.

17.64.180 Effective Precipitation.

The County may consider Effective Precipitation as defined in the California Code of Regulations §494 or successor document in tracking water use.

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Comparison of the BF Basic Landscape Checklist to
CA Model Water Efficiency Landscape Ordinance

	Bay-Friendly Landscape Practice	CA-WELO
	1) **Mulch**. All soil on site is protected with a minimum of 3 inches of mulch after construction.	WELO requires 2 inches.
	2) **Amend the Soil with Compost Before Planting.** Compost is specified as the soil amendment, at the rates indicated by a soil analyst to bring the organic matter content to a minimum of 3.5% by dry weight or 1 inch of compost.	Requires soil analysis but does not require compost.
*	3) **Reduce and Recycle Landscape Construction Waste.** Divert 50% of landscape construction and demolition waste by weight. Verify the local jurisdiction's minimum requirement and reporting procedures for construction and demolition (C&D) recycling.	*Not required by WELO.* Compatible with Construction and Demolition Debris Management Guidelines in 15.08.
	4) **Choose & Locate Plants to Grow to Natural Size.** Species will be selected and plants spaced to allow them to grow to their natural size and shape. Pruning for structural integrity and health of plant is permitted.	*Not required by WELO.* Adequate spacing conserves water and contributes to meeting WELO water budget.
	5) **Do Not Plant Invasive Species.** None of the plant species listed by CAL-IPC in the San Francisco Bay Area are included in the planting plan.	WELO discourages the use of invasive plants.
	6) **Grow drought tolerant CA native, Mediterranean or climate adapted plants.** A minimum of 75% of the total number of plants in non-turf areas must be species that require no or little summer watering once established.	*Not required by WELO.* Conserves water and contributes to meeting WELO water budget.
	7) **Minimize the Lawn.** A maximum of 25% of total irrigated area is specified as turf, with sports or multiple use fields exempted.	*Not required by WELO.* Conserves water and contributes to meeting WELO water budget.
*	8) **Specify Weather Based Controllers.** Weather-based irrigation controllers, soil moisture based controllers or other self-adjusting irrigation controllers, shall be required for all irrigation systems.	Required by WELO.
*	9) **Sprinkler & Spray Heads are not Specified for Areas Less than 8 feet Wide.** Sprinkler and spray heads are not specified in areas less than or equal to 8 feet wide to prevent overspray and runoff.	Required by WELO.

* Bay Friendly Landscaping Basics already required by Alameda County Construction and Demolition Ordinance or by the California Water Efficient Landscapes Ordinance.

COMPARISON OF INSTALLATION COSTS BETWEEN GARDENS USING TRADITIONAL AND CALIFORNIA NATIVE PLANTSCAPES

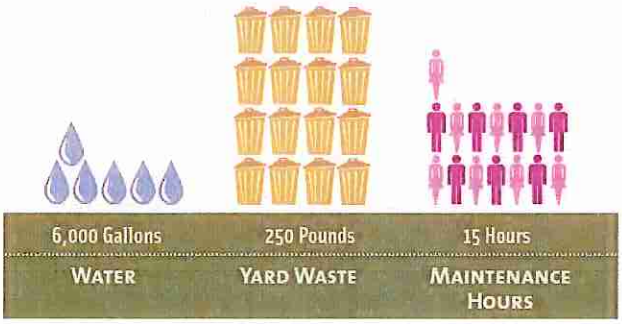
Item		Native Garden	Traditional Garden
Design		$1,500	$1,500
Demolition		$4,100	$2,900
Soil Prep, Plants, Mulch		$5,100	$3,500
Irrigation System		$2,400	$3,400
Boulders, Bender Board, Signage		$3,100	$2,800
Urban Runoff Features -			
Rain Catchment, Infiltration Pit		$3,900	None
Permeable Paving		$2,000	None
	Total	**$22,100**	**$14,100**
Cost per square foot		$11.06	$7.50

Installation Cost increase of 47% when compared with a Traditional Landscape

LANDSCAPE WITH CA-NATIVE PLANTS

TRADITIONAL LANDSCAPE

Sustainable Landscape



MAINTENANCE SAVINGS USING SUSTAINABLE LANDSCAPES OVER 1 YEAR

WATER – 89%

WASTE – 63%

MAINTENANCE HOURS – 81%

Traditional Landscape