Draft of April 20, 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.