MONTEREY COUNTY PLANNING COMMISSION

Meeting: April 9, 2014 Time 9:30 AM	**Agenda Item No.:** 4
Project Description: Conduct a workshop to consider, seek public input and provide direction on the proposed Water and Energy Efficient Landscape Ordinance and related Manual for the unincorporated area of the County of Monterey to reduce water and energy consumption through landscape design techniques.	
Project Location: County-wide	**APN:** County-wide
Planning File Number: REF110056	**Owner:** N/A
Planning Area: County-wide	**Flagged and staked:** N/A
Zoning Designation: County-wide	
CEQA Action: Statutorily Exempt per Section 15262	
Department: RMA - Planning	

RECOMMENDATION:
Staff recommends that the Planning Commission conduct a workshop to consider, seek public input and provide direction on the proposed Water and Energy Efficient Landscape Ordinance and related Manual for the unincorporated area of the County of Monterey to reduce water and energy consumption through landscape design techniques.

PROJECT OVERVIEW:
The purpose of the workshop is to seek public input, and receive comment and direction from the Planning Commission, on draft regulations contained in the draft Water and Energy Efficiency Landscape Ordinance (Landscape Ordinance – **Exhibit F**) and the accompanying Standards, Guidelines, and Specified Performance Requirements for Landscape Water Use and Irrigation Manual (Landscape Manual – **Exhibit G**) in compliance with Assembly Bill 1881 – Water Conservation in Landscaping Act (AB 1881).

On December 12, 2012, the Planning Commission conducted a workshop on the requirements contained in AB 1881 and options related to compliance by the County. Based on comments and direction received from the Commission, Long Range Planning staff developed a draft Landscape Ordinance and Landscape Manual. To ensure the implementing Landscape Manual is user friendly, it has been developed with considerable input from local landscape architects, contractors, and nurseries.

Existing County water conservation regulations relative to landscaping are currently in various County governing documents: the Monterey County Code (Chapters 18.44 and 18.50) and the Monterey County Coastal Implementation Plans (Parts 2 through 5). Additional regulations related to water use are also enforced by the Monterey County Water Resources Agency, the Monterey Peninsula Water Management District, and the Marina Coast Water District for projects located within their jurisdictional areas.

Although there are existing water conservation regulations in place, several triggers resulted in the need for the County to establish a Landscape Ordinance. The State of California passed Assembly Bill 1881 – Water Conservation in Landscaping Act, requiring local jurisdictions to either adopt the State Model Water Efficient Landscape Ordinance or a local ordinance that is at least as effective in conserving water as the model ordinance. At this time, the County is operating under the State Model Ordinance. In addition, implementation of policies contained in the 2010 General Plan require enhancement of ground water resources; establishing water conservation measures; utilizing native, native compatible and/or drought resistant plant species; encouraging the eradication of

invasive exotic plants; and providing a list of acceptable fire-resistant plants. (See **Exhibit A** for an in-depth discussion).

The draft Landscape Ordinance and Landscape Manual comply with State requirements, implements specific policies of the 2010 General Plan, and are consistent with existing County regulations as well as the additional regulations prescribed by the previously identified outside agencies. In addition to water and energy conservation measures, the Landscape Ordinance and Landscape Manual contain regulations and recommendations for fire safe landscaping and the eradication of invasive plant species.

Requirements included in the draft Landscape Ordinance will result in a change in existing procedures and typical information required for submittal, review, and approval by the County related to landscape plans. The Landscape Manual has been developed to be a tool that the public, landscape designers, and staff can utilize to understand the new landscape review process, regulations, and facilitate education in water conservation in landscaping.

The concept and approach for the Ordinance was brought before the Board's Alternative Energy and Environment Committee, local landscape architects, designers, contractors, nurseries and other stakeholders. Comments were received, noted, and considered in the draft Landscape Ordinance and/or the Landscape Manual as appropriate.

A more detailed discussion can be found in **Exhibit A**.

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March 21, 2014

cc: Front Counter Copy; Planning Commission; Fire Protection Districts; RMA - Public Works; Parks Department; Environmental Health Bureau; Monterey County Water Resources Agency; Monterey Peninsula Water Management District; Monterey Bay Unified Air Pollution Control District; Monterey County Agricultural Commissioner; Alternative Energy and Environment Committee (AEE); California Coastal Commission; Land Use Advisory Committees (11); Marti Noel, RMA Assistant Director; Jacqueline Onciano, RMA-Planning Services Manager; Anna V. Quenga, Project Planner; Streamlining Task Force (Ernie Mill); The Open Monterey Project (Molly Erickson); LandWatch (Amy White); John H. Farrow; Janet Brennan; Paul Lord, Water Conservation Specialist, Marina Coast Water District; Planning File REF110056.

Attachments:

	Exhibit A	Project Discussion
	Exhibit B	State Law – Assembly Bill 1881 (Chaptered)
	Exhibit C	State Model Ordinance
	Exhibit D	2010 General Plan Policies
	Exhibit E	Comparison Table
	Exhibit F	Discussion Draft Energy and Water Efficient Landscape Ordinance
	Exhibit G	Draft Monterey County Landscape Manual

This report was reviewed by Marti Noel, RMA Assistant Director and Jacqueline R. Onciano, RMA Services Manager.

EXHIBIT A
DISCUSSION

The Long Range Planning staff has developed a draft Water and Energy Efficient Landscape Ordinance (Landscape Ordinance) and a Monterey County Landscape Manual – Standards, Guidelines, and Specified Performance Requirements for Landscape Water Use and Irrigation (Landscape Manual) to provide standards for landscaping. Adoption of the Landscape Ordinance and approval of the Landscape Manual by resolution will result in water conservation, energy conservation, as well as responsible landscaping design relative to fire protection and the eradication of invasive plant species for projects subject to the ordinance.

Need for a Landscape Ordinance

Water conservation is a primary concern locally and state-wide as it remains to be in limited supply while the demand for it continues to increase. Statistics indicate the average household uses roughly 320 gallons of water per day, with 30% of that utilized for outdoor uses and with inefficient irrigation systems, 50% of that water is wasted[1]. To promote water conservation and prevent the waste of this valuable resource, the State of California passed Assembly Bill 1881 – Water Conservation in Landscaping Act (Act), with the basic premise that "landscape design, installation, maintenance, and management can *and* should be water efficient." In addition, implementation of specific 2010 Monterey County General Plan policies will result in the conservation and recharge of groundwater as well as encourage the eradication of exotic invasive plant species and incorporate the use of fire smart design in landscapes.

State Law – Assembly Bill 1881 and the State Model Ordinance

Through the Act, an updated State Model Water Efficient Landscape Ordinance (State Model Ordinance) was developed. The Act mandates that local governments either adopt the model ordinance or an ordinance *at least* as effective, based on evidence in the record, in conserving water by January 1, 2010. If neither has occurred by that date, the local agency is required to enforce the State Model Ordinance, which is what Monterey County has been doing until a local ordinance is adopted.

Pursuant to Section 65596 of the Government Code, specific elements were identified to be included within the State Model Ordinance. To create reasonable regulations for the County and meet the purpose and obligations of the State Model Ordinance, staff has recommended that the state specified requirements be incorporated within either the draft Landscape Ordinance or Landscape Manual.

2010 General Plan Policies

Water conversation is critical to Monterey County and its residents and landscaping is a key area where water use can be reduced. Requiring installation and maintenance of landscape designs that use less water will result in water conservation. In addition to compliance with state law, adoption of the draft Landscape Ordinance will result in the implementation of six (6) specific 2010 General Plan policies. The main principles of four policies (PS-2.8; PS-3.11; PS-3.12; and OS-5.6) are potable water conservation and ground water recharge. Implementation of these policies will require planting with low water use, drought tolerant, and native or native compatible vegetation; designing irrigation systems to be water efficient; and incorporating Low Impact Development (LID) landscape techniques to capture and maintain stormwater onsite. Implementation of Policies OS-5.14 and S-2.4 will encourage the exclusion and eradication of invasive plants and incorporating the use of fire-resistant plants. See **Exhibit D** for full text of

[1] Statistical information obtained from the United States Environmental Protection Agency (EPA).

the policies. While the 2010 General Plan only applies to the non coastal areas of unincorporated Monterey County, the draft Ordinance and Manual are recommended to be applicable County wide to comply with state law.

Existing Regulations

Existing County regulations relative to landscaping can be found in various County documents. Although these regulations are similar, they are tied to certain geographic areas of the County. Fundamentally, the regulations call for the use of drought tolerant plants, native plants, and the use of and low precipitation sprinkler heads, bubblers, drip irrigation system and timing devices as part of the exterior landscape. Furthermore, existing County policies encourage the use of native plants, fire resistant plants and the eradication of invasive plant species.

Monterey County Code Chapters 18.44 and 18.50

Monterey County Code Chapters (MCC) 18.44 and 18.50 are identical, requiring new construction to incorporate low water use or native plants and low water use irrigation systems as part of the landscape design. However, the differences lie in applicability. MCC 18.44 is applicable in unincorporated areas of the County served by the California American Water Service Company whereas MCC 18.50 is applicable to unincorporated areas of the County within the Greater Salinas, Toro, and Greater Monterey Peninsula planning areas as well as a portion of the North County Planning Area (including the Coastal Zone).

Monterey County Coastal Implementation Plans Parts 2-5

The North County Coastal Implementation Plan, Big Sur Coast Coastal Implementation Plan, Carmel Coastal Implementation Plan, and the Del Monte Forest Coastal Implementation Plan all include policies that address water conservation relative to landscaping. Similar to existing regulations, the 2010 General Plan, and state law, water conservation techniques in the coastal zone include landscaping with low water use (or drought tolerant) vegetation, water efficient irrigation systems, and incorporating recycled water where feasible.

Monterey County Water Resources Agency

On July 22, 1997, the Monterey County Water Resources Agency adopted Ordinance No. 3932 which also addresses water efficiency in landscaping through the use of drought tolerant planting, encouraging the use of non-potable water for landscape irrigation, and limiting the use of turf grass.

Monterey Peninsula Water Management District and the Marina Coast Water District

There are areas within unincorporated Monterey County that are located within the Monterey Peninsula Water Management District (MPWMD) and the Marina Coast Water District (MCWD) and therefore are subject to their regulations. MPWMD Rule 142, Water Efficiency Standards, requires landscaping to be consistent with the State Model Water Efficient Landscape Ordinance. In addition, MCWD Ordinance No. 40 and Section 3.36.030S.2, Water Conservation, of the District code requires new construction to conform to the requirements of the State Model Water Efficient Landscape Ordinance.

How it All Fits Together

In an effort to simplify and maintain consistency with the various existing regulations, staff proposes to combine all similar/identical regulations into one inclusive Landscape Ordinance. Attached as **Exhibit E,** is a Comparison Table that demonstrates evaluation of requirements outlined in state law, the 2010 General Plan polices, and the previously listed existing regulations. An overlap has been identified as different County agencies and regulations contain similar language and requirements. Staff does not propose to create an ordinance where RMA-Planning

would take ownership over the responsibilities required by the outside agencies (primarily Water Resources Agency, Monterey Peninsula Water Management District, and the Marina Coast Water District). They are included as part of the analysis due to the potential for overlap in regulations.

Proposed Approach – Landscape Ordinance and Landscape Manual

Through analysis of the regulations, staff identified the need for a Landscape Ordinance that contains regulatory language and a Landscape Manual that explains new requirements and presents technical information in a user-friendly format.

Landscape Ordinance

The proposed Landscape Ordinance (**Exhibit F**) would be applicable to both the inland and coastal areas of the County. To reduce the need for separate inland and coastal ordinances, as well as to provide consistent landscape requirements throughout the County, staff recommends that a new chapter be added to Title 16 – Environment of the Monterey County Code. Chapter 16.61 "Standards for Landscaping" will satisfy the requirements outlined in state law and combine similar regulations found in the 2010 General Plan, the Monterey County Code, and the Monterey County Coastal Implementation Plans. Any issues specific to a particular Coastal area will continue to be addressed through the update of the Coastal Implementation Plan (CIP) for the area in question.

Key sub-sections of the draft Landscape Ordinance include:

- Applicability – Applicability is tied to use/occupancy and the square footage of the landscape area. New terms such as "rehabilitated landscapes," "developer installed," and "home-owner installed" are introduced and defined.

- Landscape Manual – The ordinance provides regulations that refer to the Landscape Manual for technical information and non-regulatory language. Reference to the Landscape Manual and the information it contains is found throughout the ordinance.

- Landscape Package Submittal Requirements – The landscape package that applicants are required to submit will now contain more information than previously required for staff to conduct the necessary review.

- Planting Plans – Planting plans will now be required to include additional information such as plant groupings in hydrozones and grading information to ensure that water conservation can be achieved.

- Irrigation Design Plans – Irrigation plans will now be required to include more information and detail to insure that the proposed systems comply with the water conservation requirements. The irrigation systems will be required to meet the water efficiency criteria described in the Water Efficient Landscape Requirements.

- Water Efficient Landscape Requirements – Water use and water budget analysis are introduced and defined. Applicants will be required to provide Maximum Applied Water Allowance (MAWA) calculations, Hydrozone Information Tables, and Estimated Total Water Use (ETWU) calculations as part of a Water Efficient Landscape Worksheet. Additional explanation is included in the Manual to assist applicants.

- Energy Efficiency – Energy efficiency requirements are introduced primarily pertaining to lighting. Energy components of the landscape design require consistency with Monterey County Code Chapter 18.12 – Green Building which refers to the California Energy Code that addresses mandatory requirements for pool and spa systems, lighting controls devices and outdoor lighting, and externally illuminated signs.

- Soils Management Report – Analysis of the soil, relative to horticulture, will now be required. Soils analysis is required to be used in conjunction with the preparation of planting and irrigation plans to promote healthy plant growth and prevent excessive erosion and runoff.

- Certificate of Completion – Upon completion of landscape installation, but prior to final sign off by the County, applicants will be required to submit a Certificate of Completion. The Certificate of Completion, signed by either the landscape designer or contractor, certifies that the planting and irrigation has been installed in accordance with the approved plans. In addition, it contains information verifying that the irrigation system has been audited and is working properly. A watering and maintenance schedule is also required as part of the Certificate of Completion.

Landscape Manual

Staff proposes that the Board of Supervisors adopt the Landscape Manual (**Exhibit G**) by resolution, allowing the Manual to be modified without needing to modify the Ordinance as new technology for water and energy efficiency becomes available or if new plants are identified as invasive or fire resistant. As previously stated, the main purpose of the Landscape Manual is to assist applicants in understanding some of the more complicated requirements (i.e. Water Efficient Landscape Worksheet, plant groupings, irrigation, suggestions for low impact development, etc.). In addition the Manual contains detailed descriptions and examples to assist applicants and landscape designers in preparing landscape submittal packages, including recommended plant lists.

Stakeholder Involvement

The concept and approach for developing the Landscape Ordinance and Landscape Manual was brought before the Alternative Energy and Environment Committee (AEE) for input. In addition staff reached out to potential future users through various stakeholder meetings and direct contact with landscape designers and nurseries. The draft Landscape Manual was distributed to over 20 local plant nurseries, landscape contractors, and landscape architects for review and comment. A number of excellent comment letters were received which included suggested changes, additions, and areas of the manual that need clarification. The primary comments ranged from identifying a clear relationship and alignment for guidelines related to landscaping, fire defense zones, and planting trees for energy efficiency to clarifying definitions and the requirement of soils analysis.

Next Steps

Input received from the Planning Commission, public and key stakeholders will allow completion of the final draft for the Landscape Ordinance and Landscape Manual. Subsequent to completing the final drafts, environmental review will be conducted and the final draft Ordinance and Manual will be brought back to the Planning Commission for a formal recommendation to the Board of Supervisors.

EXHIBIT B

STATE LAW – ASSEMBLY BILL 1881 (CHAPTERED)

CHAPTER 559
FILED WITH SECRETARY OF STATE SEPTEMBER 28, 2006
APPROVED BY GOVERNOR SEPTEMBER 28, 2006
PASSED THE ASSEMBLY AUGUST 30, 2006
PASSED THE SENATE AUGUST 28, 2006
AMENDED IN SENATE AUGUST 23, 2006
AMENDED IN SENATE AUGUST 7, 2006
AMENDED IN SENATE JUNE 12, 2006
AMENDED IN ASSEMBLY MAY 4, 2006
AMENDED IN ASSEMBLY APRIL 6, 2006

INTRODUCED BY Assembly Member Laird

JANUARY 23, 2006

An act to add Section 1353.8 to the Civil Code, to repeal and add Article 10.8 (commencing with Section 65591) of Chapter 3 of Division 1 of Title 7 of the Government Code, to add Section 25401.9 to the Public Resources Code, and to add Article 4.5 (commencing with Section 535) to Chapter 8 of Division 1 of the Water Code, relating to water conservation.

LEGISLATIVE COUNSEL'S DIGEST

AB 1881, Laird Water conservation.

(1) Existing law, the Davis-Sterling Common Interest Development Act, defines and regulates common interest developments, which include community apartment projects, condominium projects, planned developments, and stock cooperatives.

This bill would provide that the architectural guidelines of a common interest development shall not prohibit or include conditions that have the effect of prohibiting the use of low water-using plants as a group.

(2) The Water Conservation in Landscaping Act requires the Department of Water Resources to appoint an advisory task force to work with the department to draft a model local water efficient landscape ordinance that local agencies may adopt, requires the task force to submit the ordinance to the department on or before May 1, 1991, and requires the task force to cease to exist on the date the department adopts the model ordinance or January 1, 1992, whichever occurs first. The act requires the department, not later than January 1, 1992, to adopt a model local water efficient landscape ordinance which each local agency may adopt. The act makes the model local water efficient landscape ordinance adopted by the department applicable within the jurisdiction of a local agency if that local agency, by January 1, 1993, has not adopted a water efficient landscape ordinance or has not adopted certain findings that the adoption of the ordinance is unnecessary.

This bill would specify that the provision making the model ordinance applicable to a local agency on and after January 1, 1993, does not apply to chartered cities. The bill would require the department, to the extent funds are appropriated, not later than January 1, 2009, by regulation, to update the model ordinance in accordance with specified requirements. The bill would require the department to prepare and submit to the Legislature a prescribed report before the adoption of the updated model ordinance. The bill would require a local agency, not later than January 1, 2010, to

adopt the updated model ordinance or other water efficient landscape ordinance that is at least as effective in conserving water as the updated model ordinance. The bill would make the updated model ordinance applicable within the jurisdiction of a local agency, including a chartered city, if, by January 1, 2010, the local agency has not adopted its own water efficient landscape ordinance or the updated model ordinance. The bill would require each local agency, not later than January 31, 2010, to notify the department as to whether the local agency is subject to the department's updated model ordinance and, if not, to submit to the department a copy of the water efficient landscape ordinance adopted by the local agency, among other documents. The bill would require the department, to the extent funds are appropriated, not later than January 31, 2011, to prepare and submit a report to the Legislature relating to the status of water efficient landscape ordinances adopted by local agencies.

By imposing requirements on local agencies in connection with the adoption of water efficient landscape ordinances, the bill would impose a state-mandated local program.

(3) Existing law requires the State Energy Resources Conservation and Development Commission (Energy Commission), after one or more public hearings, to take specified action to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy. Existing law requires the Energy Commission, by January 1, 2004, to amend specified regulations to require that residential clothes washers manufactured on or after January 1, 2007, be at least as water efficient as commercial clothes washers, and to take certain other related action.

This bill would require the Energy Commission, in consultation with the department, to adopt, to the extent funds are available, by regulation performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water. The bill would require the Energy Commission to adopt those requirements for landscape irrigation controllers and moisture sensors by January 1, 2010, and, on and after January 1, 2012, would prohibit the sale or installation of an irrigation controller or moisture sensor for landscape use unless the controller or sensor meets those adopted requirements. The bill would require the Energy Commission, on or before January 1, 2010, to prepare and submit to the Legislature a report that sets forth a proposed schedule for adopting performance standards and labeling requirements for emission devices and valves.

(4) Existing law generally requires an urban water supplier to install water meters on all municipal and industrial service connections located within its service area on or before January 1, 2025.

This bill would require a water purveyor as defined, to require as a condition of new retail water service on and after January 1, 2008, the installation of separate water meters to measure the volume of water used exclusively for landscape purposes. The bill would make this requirement applicable to specified service connections.

(5) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that, if the Commission on State Mandates

determines that the bill contains costs mandated by the state, reimbursement for those costs shall be made pursuant to these statutory provisions.

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. Section 1353.8 is added to the Civil Code, to read:

1353.8. The architectural guidelines of a common interest development shall not prohibit or include conditions that have the effect of prohibiting the use of low water-using plants as a group.

SEC. 2. Article 10.8 (commencing with Section 65591) of Chapter 3 of Division 1 of Title 7 of the Government Code is repealed.

SEC. 3. Article 10.8 (commencing with Section 65591) is added to Chapter 3 of Division 1 of Title 7 of the Government Code, to read:

Article 10.8. Water Conservation in Landscaping

65591. This article shall be known and may be cited as the Water Conservation in Landscaping Act.

65592. Unless the context requires otherwise, the following definitions govern the construction of this article:

(a) "Department" means the Department of Water Resources.

(b) "Local agency" means any city, county, or city and county, including a charter city or charter county.

(c) "Water efficient landscape ordinance" means an ordinance or resolution adopted by a local agency, or prepared by the department, to address the efficient use of water in landscaping.

65593. The Legislature finds and declares all of the following:

(a) The waters of the state are of limited supply and are subject to ever increasing demands.

(b) The continuation of California's economic prosperity is dependent on adequate supplies of water being available for future uses.

(c) It is the policy of the state to promote the conservation and efficient use of water and to prevent the waste of this valuable resource.

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

(e) Landscape design, installation, maintenance, and management can and should be water efficient.

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

(g) (1) The Legislature, pursuant to Chapter 682 of the Statutes of 2004, requested the California Urban Water Conservation Council to convene a stakeholders work group to develop recommendations for improving the efficiency of water use in urban irrigated landscapes.

(2) The work group report includes a recommendation to update the model water efficient landscape ordinance adopted by the department pursuant to Chapter 1145 of the Statutes of 1990.

(3) It is the intent of the Legislature that the department promote the use of this updated model ordinance.

(h) Notwithstanding Article 13 (commencing with Section 65700), this article addresses a matter that is of statewide concern and is not a municipal affair as that term is used in Section 5 of Article XI of the California Constitution. Accordingly, it is the intent of the Legislature that this article, except as provided in Section 65594, apply to all cities and counties, including charter cities and charter counties.

65594. (a) Except as provided in Section 65595, if by January 1, 1993, a local agency did not adopt a water efficient landscape ordinance and did not adopt findings based on climatic, geological, or topographical conditions, or water availability that state that a water efficient landscape ordinance is unnecessary, the model water efficient landscape ordinance adopted by the department pursuant to Chapter 1145 of the Statutes of 1990 shall apply within the jurisdiction of the local agency as of that date, shall be enforced by the local agency, and shall have the same force and effect as if adopted by the local agency.

(b) Notwithstanding subdivision (b) of Section 65592, subdivision (a) does not apply to chartered cities.

(c) This section shall apply only until the department updates the model ordinance.

65595. (a) (1) To the extent funds are appropriated, not later than January 1, 2009, by regulation, the department shall update the model water efficient landscape ordinance adopted pursuant to Chapter 1145 of the Statutes of 1990, after holding one or more public hearings. The updated model ordinance shall be based on the recommendations set forth in the report prepared pursuant to Chapter 682 of the Statutes of 2004 and shall meet the requirements of Section 65596.

(2) Before the adoption of the updated model ordinance pursuant to paragraph (1), the department shall prepare and submit to the Legislature a report relating to both of the following:

(A) The extent to which local agencies have complied with the model water efficient landscape ordinance adopted pursuant to Chapter 1145 of the Statutes of 1990.

(B) The department's recommendations regarding the landscape water budget component of the updated model ordinance described in subdivision (b) of Section 65596.

(b) Not later than January 31, 2009, the department shall distribute the updated model ordinance adopted pursuant to subdivision (a) to all local agencies and other interested parties.

(c) On or before January 1, 2010, a local agency shall adopt one of the following:

(1) A water efficient landscape ordinance that is, based on evidence in the record, at least as effective in conserving water as the updated model ordinance adopted by the department pursuant to subdivision (a).

(2) The updated model ordinance described in paragraph (1).

(d) If the local agency has not adopted, on or before January 1, 2010, a water efficient landscape ordinance pursuant to subdivision (c), the updated model ordinance adopted by the department pursuant to subdivision (a) shall apply within the jurisdiction of the local agency as of that date, shall be enforced by the local agency, and shall have the same force and effect as if adopted by the local agency.

(e) Nothing in this article shall be construed to require the local agency's water efficient landscape ordinance to duplicate, or

to conflict with, a water efficiency program or measure implemented by a public water system, as defined in Section 116275 of the Health and Safety Code, within the jurisdictional boundaries of the local agency.

65596. The updated model ordinance adopted pursuant to Section 65595 shall do all the following in order to reduce water use:

(a) Include provisions for water conservation and the appropriate use and groupings of plants that are well-adapted to particular sites and to particular climatic, soil, or topographic conditions. The model ordinance shall not prohibit or require specific plant species, but it may include conditions for the use of plant species or encourage water conserving plants. However, the model ordinance shall not include conditions that have the effect of prohibiting or requiring specific plant species.

(b) Include a landscape water budget component that establishes the maximum amount of water to be applied through the irrigation system, based on climate, landscape size, irrigation efficiency, and plant needs.

(c) Promote the benefits of consistent local ordinances in neighboring areas.

(d) Encourage the capture and retention of stormwater onsite to improve water use efficiency or water quality.

(e) Include provisions for the use of automatic irrigation systems and irrigation schedules based on climatic conditions, specific terrains and soil types, and other environmental conditions. The model ordinance shall include references to local, state, and federal laws and regulations regarding standards for water-conserving irrigation equipment. The model ordinance may include climate information for irrigation scheduling based on the California Irrigation Management Information System.

(f) Include provisions for onsite soil assessment and soil management plans that include grading and drainage to promote healthy plant growth and to prevent excessive erosion and runoff, and the use of mulches in shrub areas, garden beds, and landscaped areas where appropriate.

(g) Promote the use of recycled water consistent with Article 4 (commencing with Section 13520) of Chapter 7 of Division 7 of the Water Code.

(h) Seek to educate water users on the efficient use of water and the benefits of doing so.

(i) Address regional differences, including fire prevention needs.

(j) Exempt landscaping that is part of a registered historical site.

(k) Encourage the use of economic incentives to promote the efficient use of water.

(l) Include provisions for landscape maintenance practices that foster long-term landscape water conservation. Landscape maintenance practices may include, but are not limited to, performing routine irrigation system repair and adjustments, conducting water audits, and prescribing the amount of water applied per landscaped acre.

(m) Include provisions to minimize landscape irrigation overspray and runoff.

65597. Not later than January 31, 2010, each local agency shall notify the department as to whether the local agency is subject to the department's updated model ordinance adopted pursuant to Section 65595, and if not, shall submit to the department a copy of the water efficient landscape ordinance adopted by the local agency, and a

copy of the local agency's findings and evidence in the record that its water efficient landscape ordinance is at least as effective in conserving water as the department's updated model ordinance. Not later than January 31, 2011, the department shall, to the extent funds are appropriated, prepare and submit a report to the Legislature summarizing the status of water efficient landscape ordinances adopted by local agencies.

65598. Any model ordinance adopted pursuant to this article shall exempt cemeteries from all provisions of the ordinance except those set forth in subdivisions (h), (k), and (l) of Section 65596. In adopting language specific to cemeteries, the department shall recognize the special landscape management needs of cemeteries.

65599. Any actions or proceedings to attach, review, set aside, void, or annul the act, decision, or findings of a local agency on the ground of noncompliance with this article shall be brought pursuant to Section 1085 of the Code of Civil Procedure.

SEC. 4. Section 25401.9 is added to the Public Resources Code, to read:

25401.9. (a) To the extent that funds are available, the commission, in consultation with the Department of Water Resources, shall adopt by regulation, after holding one or more public hearings, performance standards and labeling requirements for landscape irrigation equipment, including, but not limited to, irrigation controllers, moisture sensors, emission devices, and valves, for the purpose of reducing the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

(b) For the purposes of complying with subdivision (a), the commission shall do all of the following:

(1) Adopt performance standards and labeling requirements for landscape irrigation controllers and moisture sensors on or before January 1, 2010.

(2) Consider the Irrigation Association's Smart Water Application Technology Program testing protocols when adopting performance standards for landscape irrigation equipment, including, but not limited to, irrigation controllers, moisture sensors, emission devices, and valves.

(3) Prepare and submit a report to the Legislature, on or before January 1, 2010, that sets forth on a proposed schedule for adopting performance standards and labeling requirements for emission devices and valves.

(c) On and after January 1, 2012, an irrigation controller or moisture sensor for landscape irrigation uses may not be sold or installed in the state unless the controller or sensor meets the performance standards and labeling requirements established pursuant to this section.

SEC. 5. Article 4.5 (commencing with Section 535) is added to Chapter 8 of Division 1 of the Water Code, to read:

Article 4.5. Irrigated Landscape

535. (a) A water purveyor shall require as a condition of new retail water service on and after January 1, 2008, the installation of separate water meters to measure the volume of water used exclusively for landscape purposes.

(b) Subdivision (a) does not apply to either of the following:

(1) Single-family residential connections.

(2) Connections used to supply water for the commercial production

of agricultural crops or livestock.

(c) Subdivision (a) applies only to a service connection for which both of the following apply:

(1) The connection serves property with more than 5,000 square feet of irrigated landscape.

(2) The connection is supplied by a water purveyor that serves 15 or more service connections.

(d) For the purposes of this section, "new retail water service" means the installation of a new water meter where water service has not been previously provided, and does not include applications for new water service submitted before January 1, 2007.

SEC. 6. If the Commission on State Mandates determines that this act contains costs mandated by the state, reimbursement to local agencies and school districts for those costs shall be made pursuant to Part 7 (commencing with Section 17500) of Division 4 of Title 2 of the Government Code.

EXHIBIT C

STATE MODEL ORDINANCE

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

§ 490. Purpose.

(a) The State Legislature has found:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

§ 490.1 Applicability

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

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

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

(3) new construction landscapes which are homeowner-provided and/or homeowner-hired in single-family and multi-family residential projects with a total project landscape area equal to or greater than 5,000 square feet requiring a building or landscape permit, plan check or design review;

(4) existing landscapes limited to Sections 493, 493.1 and 493.2; and

(5) cemeteries. Recognizing the special landscape management needs of cemeteries, new and rehabilitated cemeteries are limited to Sections 492.4, 492.11 and 492.12; and existing cemeteries are limited to Sections 493, 493.1 and 493.2.

(b) This ordinance does not apply to:

registered local, state or federal historical sites;

ecological restoration projects that do not require a permanent irrigation system;

mined-land reclamation projects that do not require a permanent irrigation system; or

plant collections, as part of botanical gardens and arboretums open to the public.

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

§ 491. Definitions.

The terms used in this ordinance have the meaning set forth below:

(a) "applied water" means the portion of water supplied by the irrigation system to the landscape.

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

(c) "backflow prevention device" means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.

(d) "Certificate of Completion" means the document required under Section 492.9.

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

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

(g) "check valve" or "anti-drain valve" means a valve located under a sprinkler head, or other location in the irrigation system, to hold water in the system to prevent drainage from sprinkler heads when the sprinkler is off.

(h) "common interest developments" means community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1351.

(i) "conversion factor (0.62)" means the number that converts acre-inches per acre per year to gallons per square foot per year

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

(k) "ecological restoration project" means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

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

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

(n) "established landscape" means the point at which plants in the landscape have developed significant root growth into the soil. Typically, most plants are established after one or two years of growth.

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

(p) "Estimated Total Water Use" (ETWU) means the total water used for the landscape as described in Section 492.4.

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

A combined plant mix with a site-wide average of 0.5 is the basis of the plant factor portion of this calculation. For purposes of the ETAF, the average irrigation efficiency is 0.71. Therefore, the ET Adjustment Factor is (0.7)=(0.5/0.71). ETAF for a Special Landscape Area shall not exceed 1.0. ETAF for existing non-rehabilitated landscapes is 0.8.

(r) "evapotranspiration rate" means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time.

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

(t) "hardscapes" means any durable material (pervious and non-pervious).

(u) "homeowner-provided landscaping" means any landscaping either installed by a private individual for a single family residence or installed by a licensed contractor hired by a homeowner. A homeowner, for purposes of this ordinance, is a person who occupies the dwelling he or she owns. This excludes speculative homes, which are not owner-occupied dwellings.

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

(w) "infiltration rate" means the rate of water entry into the soil expressed as a depth of water per unit of time (e.g., inches per hour).

(x)"invasive plant species" means species of plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources. Invasive species may be regulated by county agricultural agencies as noxious species. "Noxious weeds" means any weed designated by the Weed Control Regulations in the Weed Control Act and identified on a Regional District noxious weed control list. Lists of invasive plants are maintained at the California Invasive Plant Inventory and USDA invasive and noxious weeds database.
(y) "irrigation audit" means an in-depth evaluation of the performance of an irrigation system conducted by a Certified Landscape Irrigation Auditor. An irrigation audit includes, but is not limited to: inspection, system tune-up, system test with distribution uniformity or emission uniformity, reporting overspray or runoff that causes overland flow, and preparation of an irrigation schedule.
(z) "irrigation efficiency" (IE) means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum average irrigation efficiency for purposes of this ordinance is 0.71. Greater irrigation efficiency can be expected from well designed and maintained systems.
(aa) "irrigation survey" means an evaluation of an irrigation system that is less detailed than an irrigation audit. An irrigation survey includes, but is not limited to: inspection, system test, and written recommendations to improve performance of the irrigation system.
(bb) "irrigation water use analysis" means an analysis of water use data based on meter readings and billing data.
(cc) "landscape architect" means a person who holds a license to practice landscape architecture in the state of California Business and Professions Code, Section 5615.
(dd) "landscape area" means all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance calculation. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation).
(ee) "landscape contractor" means a person licensed by the state of California to construct, maintain, repair, install, or subcontract the development of landscape systems.
(ff) "Landscape Documentation Package" means the documents required under Section 492.3.
(gg) "landscape project" means total area of landscape in a project as defined in "landscape area" for the purposes of this ordinance, meeting requirements under Section 490.1.
(hh) "lateral line" means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.
(ii) "local agency" means a city or county, including a charter city or charter county, that is responsible for adopting and implementing the ordinance. The local agency is also responsible for the enforcement of this ordinance, including but not limited to, approval of a permit and plan check or design review of a project.
(jj) "local water purveyor" means any entity, including a public agency, city, county, or private water company that provides retail water service.
(kk) "low volume irrigation" means the application of irrigation water at low pressure through a system of tubing or lateral lines and low-volume emitters such as drip, drip lines, and bubblers. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.
(ll) "main line" means the pressurized pipeline that delivers water from the water source to the valve or outlet.
(mm) "Maximum Applied Water Allowance" (MAWA) means the upper limit of annual applied water for the established landscaped area as specified in Section 492.4. It is based upon the area's reference evapotranspiration, the ET Adjustment Factor, and the size of the landscape area. The Estimated Total Water Use shall not exceed the Maximum Applied Water Allowance. Special Landscape Areas, including recreation areas, areas permanently and solely dedicated to edible plants such as orchards and vegetable gardens, and areas irrigated with recycled water are subject to the MAWA with an ETAF not to exceed 1.0.
(nn) "microclimate" means the climate of a small, specific area that may contrast with the climate of the overall landscape area due to factors such as wind, sun exposure, plant density, or proximity to reflective surfaces.
(oo) "mined-land reclamation projects" means any surface mining operation with a reclamation plan approved in accordance with the Surface Mining and Reclamation Act of 1975.
(pp) "mulch" means any organic material such as leaves, bark, straw, compost, or inorganic mineral materials such as rocks, gravel, and decomposed granite left loose and applied to the soil surface for the beneficial purposes of reducing evaporation, suppressing weeds, moderating soil temperature, and preventing soil erosion.
(qq) "new construction" means, for the purposes of this ordinance, a new building with a landscape or other new landscape, such as a park, playground, or greenbelt without an associated building.
(rr) "operating pressure" means the pressure at which the parts of an irrigation system are designed by the manufacturer to operate.
(ss) "overhead sprinkler irrigation systems" means systems that deliver water through the air (e.g., spray heads and rotors).

(tt) "overspray" means the irrigation water which is delivered beyond the target area.
(uu) "permit" means an authorizing document issued by local agencies for new construction or rehabilitated landscapes.
(vv) "pervious" means any surface or material that allows the passage of water through the material and into the underlying soil.
(ww) "plant factor" or "plant water use factor" is a factor , when multiplied by ETo, estimates the amount of water needed by plants. For purposes of this ordinance, the plant factor range for low water use plants is 0 to 0.3, the plant factor range for moderate water use plants is 0.4 to 0.6, and the plant factor range for high water use plants is 0.7 to 1.0. Plant factors cited in this ordinance are derived from the Department of Water Resources 2000 publication "Water Use Classification of Landscape Species".
(xx) "precipitation rate" means the rate of application of water measured in inches per hour.
(yy) "project applicant" means the individual or entity submitting a Landscape Documentation Package required under Section 492.3, to request a permit, plan check, or design review from the local agency. A project applicant may be the property owner or his or her designee.
(zz) "rain sensor" or "rain sensing shutoff device" means a component which automatically suspends an irrigation event when it rains.
(aaa) "record drawing" or "as-builts" means a set of reproducible drawings which show significant changes in the work made during construction and which are usually based on drawings marked up in the field and other data furnished by the contractor.
(bbb) "recreational area" means areas dedicated to active play such as parks, sports fields, and golf courses where turf provides a playing surface.
(ccc) "recycled water", "reclaimed water", or "treated sewage effluent water" means treated or recycled waste water of a quality suitable for non-potable uses such as landscape irrigation and water features. This water is not intended for human consumption.
(ddd) "reference evapotranspiration" or "ETo" means a standard measurement of environmental parameters which affect the water use of plants. ETo is expressed in inches per day, month, or year as represented in Section 495.1, and is an estimate of the evapotranspiration of a large field of four- to seven-inch tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis of determining the Maximum Applied Water Allowance so that regional differences in climate can be accommodated.
(eee) "rehabilitated landscape" means any re-landscaping project that requires a permit , plan check, or design review, meets the requirements of Section 490.1, and the modified landscape area is equal to or greater than 2,500 square feet, is 50% of the total landscape area, and the modifications are completed within one year.
(fff) "runoff" means water which is not absorbed by the soil or landscape to which it is applied and flows from the landscape area. For example, runoff may result from water that is applied at too great a rate (application rate exceeds infiltration rate) or when there is a slope.
(ggg) "soil moisture sensing device" or "soil moisture sensor" means a device that measures the amount of water in the soil. The device may also suspend or initiate an irrigation event.
(hhh) "soil texture" means the classification of soil based on its percentage of sand, silt, and clay.
(iii)"Special Landscape Area" (SLA) means an area of the landscape dedicated solely to edible plants, areas irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.
(jjj) "sprinkler head" means a device which delivers water through a nozzle.
(kkk) "static water pressure" means the pipeline or municipal water supply pressure when water is not flowing.
(lll) "station" means an area served by one valve or by a set of valves that operate simultaneously.
(mmm) "swing joint" means an irrigation component that provides a flexible, leak-free connection between the emission device and lateral pipeline to allow movement in any direction and to prevent equipment damage.
(nnn) "turf" means a ground cover surface of mowed grass. Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and Tall fescue are cool-season grasses. Bermudagrass, Kikuyugrass, Seashore Paspalum, St. Augustinegrass, Zoysiagrass, and Buffalo grass are warm-season grasses.
(ooo) "valve" means a device used to control the flow of water in the irrigation system.
(ppp) "water conserving plant species" means a plant species identified as having a low plant factor.
(qqq) "water feature" means a design element where open water performs an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, artificial streams, spas, and swimming pools (where water is artificially supplied). The surface area of water features is included in the high water use hydrozone of the landscape area. Constructed wetlands used for on-site wastewater treatment or stormwater best management practices that are not irrigated and used solely for water treatment or stormwater retention are not water features and, therefore, are not subject to the water budget calculation.

(rrr) "watering window" means the time of day irrigation is allowed.
(sss) "WUCOLS" means the Water Use Classification of Landscape Species published by the University of California Cooperative Extension, the Department of Water Resources and the Bureau of Reclamation, 2000.

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

§ 492. Provisions for New Construction or Rehabilitated Landscapes.
(a) A local agency may designate another agency, such as a water purveyor, to implement some or all of the requirements contained in this ordinance. Local agencies may collaborate with water purveyors to define each entity's specific responsibilities relating to this ordinance.
Note: Authority Cited: Section 65595, Government Code. Reference: Section 65596, Government Code.

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

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

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

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

§ 492.3 Elements of the Landscape Documentation Package.
(a) The Landscape Documentation Package shall include the following six (6) elements:
(1) project information;
(A) date
(B) project applicant
(C) project address (if available, parcel and/or lot number(s))
(D) total landscape area (square feet)
(E) project type (e.g., new, rehabilitated, public, private, cemetery, homeowner-installed)
(F) water supply type (e.g., potable, recycled, well) and identify the local retail water purveyor if the applicant is not served by a private well
(G) checklist of all documents in Landscape Documentation Package
(H) project contacts to include contact information for the project applicant and property owner
(I) applicant signature and date with statement, "I agree to comply with the requirements of the water efficient landscape ordinance and submit a complete Landscape Documentation Package".
(2) Water Efficient Landscape Worksheet;
(A) hydrozone information table
(B) water budget calculations
1. Maximum Applied Water Allowance (MAWA)
2. Estimated Total Water Use (ETWU)

(3) soil management report;
(4) landscape design plan;
(5) irrigation design plan; and
(6) grading design plan.

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

§ 492.4 Water Efficient Landscape Worksheet.
(a) A project applicant shall complete the Water Efficient Landscape Worksheet which contains two sections (see sample worksheet in Appendix B):
(1) a hydrozone information table (see Appendix B, Section A) for the landscape project; and
(2) a water budget calculation (see Appendix B, Section B) for the landscape project. For the calculation of the Maximum Applied Water Allowance and Estimated Total Water Use, a project applicant shall use the ETo values from the Reference Evapotranspiration Table in Appendix A. For geographic areas not covered in Appendix A, use data from other cities located nearby in the same reference evapotranspiration zone, as found in the CIMIS Reference Evapotranspiration Zones Map, Department of Water Resources, 1999.
(b) Water budget calculations shall adhere to the following requirements:
(1) The plant factor used shall be from WUCOLS. The plant factor ranges from 0 to 0.3 for low water use plants, from 0.4 to 0.6 for moderate water use plants, and from 0.7 to 1.0 for high water use plants.
(2) All water features shall be included in the high water use hydrozone and temporarily irrigated areas shall be included in the low water use hydrozone.
(3) All Special Landscape Areas shall be identified and their water use calculated as described below.
(4) ETAF for Special Landscape Areas shall not exceed 1.0.
(c) Maximum Applied Water Allowance
The Maximum Applied Water Allowance shall be calculated using the equation:

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

The example calculations below are hypothetical to demonstrate proper use of the equations and do not represent an existing and/or planned landscape project. The ETo values used in these calculations are from the Reference Evapotranspiration Table in Appendix A, for planning purposes only. For actual irrigation scheduling, automatic irrigation controllers are required and shall use current reference evapotranspiration data, such as from the California Irrigation Management Information System (CIMIS), other equivalent data, or soil moisture sensor data.
(1) Example MAWA calculation: a hypothetical landscape project in Fresno, CA with an irrigated landscape area of 50,000 square feet without any Special Landscape Area (SLA= 0, no edible plants, recreational areas, or use of recycled water). To calculate MAWA, the annual reference evapotranspiration value for Fresno is 51.1 inches as listed in the Reference Evapotranspiration Table in Appendix A.
MAWA = (ETo) (0.62) [(0.7 x LA) + (0.3 x SLA)]
MAWA = Maximum Applied Water Allowance (gallons per year)
ETo = Reference Evapotranspiration (inches per year)
0.62 = Conversion Factor (to gallons)
0.7 = ET Adjustment Factor (ETAF)
LA = Landscape Area including SLA (square feet)
0.3 = Additional Water Allowance for SLA
SLA = Special Landscape Area (square feet)
MAWA = (51.1 inches) (0.62) [(0.7 x 50,000 square feet) + (0.3 x 0)]
= 1,108,870 gallons per year
To convert from gallons per year to hundred-cubic-feet per year:
= 1,108,870/748 = 1,482 hundred-cubic-feet per year
(100 cubic feet = 748 gallons)

(2) In this next hypothetical example, the landscape project in Fresno, CA has the same ETo value of 51.1 inches and a total landscape area of 50,000 square feet. Within the 50,000 square foot project, there is now a 2,000 square foot area planted with edible plants. This 2,000 square foot area is considered to be a Special Landscape Area.
MAWA = (ETo) (0.62) [(0.7 x LA) + (0.3 x SLA)]
MAWA = (51.1 inches) (0.62) [(0.7 x 50,000 square feet) + (0.3 x 2,000 square feet)]

= 31.68 x [35,000 + 600] gallons per year
= 31.68 x 35,600 gallons per year
=1,127,808 gallons per year or 1,508 hundred-cubic-feet per year
(d) Estimated Total Water Use.
The Estimated Total Water Use shall be calculated using the equation below. The sum of the Estimated Total Water Use calculated for all hydrozones shall not exceed MAWA.

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

Where:

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

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

rozone	t Water Use e(s)	t Factor *	rozone (HA) are feet)	HA are feet)
			0	0
			00	0
	ium		00	0
			0	0
			00	0
				00

*Plant Factor from WUCOLS

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

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

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

rozone	t Water Use e(s)	t Factor (PF)*	rozone (HA) are feet)	HA are feet)
			0	0
			0	0
	ium		00	0
			0	0

			00	0
				00
			0	0

*Plant Factor from WUCOLS

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

= (31.68) (33,099 + 2,000)
= 1,111,936 gallons per year

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

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

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

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

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

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

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

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

§ 492.7 Irrigation Design Plan.
(a) For the efficient use of water, an irrigation system shall meet all the requirements listed in this section and the manufacturers' recommendations. The irrigation system and its related components shall be planned and designed to allow for proper installation, management, and maintenance. An irrigation design plan meeting the following design criteria shall be submitted as part of the Landscape Documentation Package.
(1) System
(A) Dedicated landscape water meters are highly recommended on landscape areas smaller than 5,000 square feet to facilitate water management.
(B) Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data shall be required for irrigation scheduling in all irrigation systems.
(C) The irrigation system shall be designed to ensure that the dynamic pressure at each emission device is within the manufacturer's recommended pressure range for optimal performance.
1. If the static pressure is above or below the required dynamic pressure of the irrigation system, pressure-regulating devices such as inline pressure regulators, booster pumps, or other devices shall be installed to meet the required dynamic pressure of the irrigation system.
2. Static water pressure, dynamic or operating pressure. and flow reading of the water supply shall be measured at the point of connection. These pressure and flow measurements shall be conducted at the design stage. If the measurements are not available at the design stage, the measurements shall be conducted at installation.
(D) Sensors (rain, freeze, wind, etc.), either integral or auxiliary, that suspend or alter irrigation operation during unfavorable weather conditions shall be required on all irrigation systems, as appropriate for local climatic conditions. Irrigation should be avoided during windy or freezing weather or during rain.
(E) Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) shall be required, as close as possible to the point of connection of the water supply, to minimize water loss in case of an emergency (such as a main line break) or routine repair.
(F) Backflow prevention devices shall be required to protect the water supply from contamination by the irrigation system. A project applicant shall refer to the applicable local agency code (i.e., public health) for additional backflow prevention requirements.
(G) High flow sensors that detect and report high flow conditions created by system damage or malfunction are recommended.
(H) The irrigation system shall be designed to prevent runoff, low head drainage, overspray, or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways, or structures.
(I) Relevant information from the soil management plan, such as soil type and infiltration rate, shall be utilized when designing irrigation systems.
(J) The design of the irrigation system shall conform to the hydrozones of the landscape design plan.
(K) The irrigation system must be designed and installed to meet, at a minimum, the irrigation efficiency criteria as described in Section 492.4 regarding the Maximum Applied Water Allowance.

(L) It is highly recommended that the project applicant or local agency inquire with the local water purveyor about peak water operating demands (on the water supply system) or water restrictions that may impact the effectiveness of the irrigation system.
(M) In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.
(N) Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations.
(O) Head to head coverage is recommended. However, sprinkler spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.
(P) Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to high traffic areas.
(Q) Check valves or anti-drain valves are required for all irrigation systems.
(R) Narrow or irregularly shaped areas, including turf, less than eight (8) feet in width in any direction shall be irrigated with subsurface irrigation or low volume irrigation system.
(S) Overhead irrigation shall not be permitted within 24 inches of any non-permeable surface. Allowable irrigation within the setback from non-permeable surfaces may include drip, drip line, or other low flow non-spray technology. The setback area may be planted or unplanted. The surfacing of the setback may be mulch, gravel, or other porous material. These restrictions may be modified if:
1. the landscape area is adjacent to permeable surfacing and no runoff occurs; or
2. the adjacent non-permeable surfaces are designed and constructed to drain entirely to landscaping; or
3. the irrigation designer specifies an alternative design or technology, as part of the Landscape Documentation Package and clearly demonstrates strict adherence to irrigation system design criteria in Section 492.7 (a)(1)(H). Prevention of overspray and runoff must be confirmed during the irrigation audit.
(T) Slopes greater than 25% shall not be irrigated with an irrigation system with a precipitation rate exceeding 0.75 inches per hour. This restriction may be modified if the landscape designer specifies an alternative design or technology, as part of the Landscape Documentation Package, and clearly demonstrates no runoff or erosion will occur. Prevention of runoff and erosion must be confirmed during the irrigation audit.
(2) Hydrozone
(A) Each valve shall irrigate a hydrozone with similar site, slope, sun exposure, soil conditions, and plant materials with similar water use.
(B) Sprinkler heads and other emission devices shall be selected based on what is appropriate for the plant type within that hydrozone.
(C) Where feasible, trees shall be placed on separate valves from shrubs, groundcovers, and turf.
(D) Individual hydrozones that mix plants of moderate and low water use, or moderate and high water use, may be allowed if:
1. plant factor calculation is based on the proportions of the respective plant water uses and their plant factor; or
2. the plant factor of the higher water using plant is used for calculations.
(E) Individual hydrozones that mix high and low water use plants shall not be permitted.
(F) On the landscape design plan and irrigation design plan, hydrozone areas shall be designated by number, letter, or other designation. On the irrigation design plan, designate the areas irrigated by each valve, and assign a number to each valve. Use this valve number in the Hydrozone Information Table (see Appendix B Section A). This table can also assist with the irrigation audit and programming the controller.
(b) The irrigation design plan, at a minimum, shall contain:
(1) location and size of separate water meters for landscape;
(2) location, type and size of all components of the irrigation system, including controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, pressure regulators, and backflow prevention devices;
(3) static water pressure at the point of connection to the public water supply;
(4) flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (pressure per square inch) for each station;
(5) recycled water irrigation systems as specified in Section 492.14;
(6) the following statement: "I have complied with the criteria of the ordinance and applied them accordingly for the efficient use of water in the irrigation design plan"; and
(7) the signature of a licensed landscape architect, certified irrigation designer, licensed landscape contractor, or any other person authorized to design an irrigation system. (See Sections 5500.1, 5615, 5641, 5641.1, 5641.2, 5641.3, 5641.4,

5641.5, 5641.6, 6701, 7027.5 of the Business and Professions Code, Section 832.27 of Title 16 of the California Code of Regulations, and Section 6721 of the Food and Agricultural Code.)

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

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

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

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

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

§ 492.10 Irrigation Scheduling.

For the efficient use of water, all irrigation schedules shall be developed, managed, and evaluated to utilize the minimum amount of water required to maintain plant health. Irrigation schedules shall meet the following criteria:
(1) Irrigation scheduling shall be regulated by automatic irrigation controllers.
Overhead irrigation shall be scheduled between 8:00 p.m. and 10:00 a.m. unless weather conditions prevent it. If allowable hours of irrigation differ from the local water purveyor, the stricter of the two shall apply. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.
For implementation of the irrigation schedule, particular attention must be paid to irrigation run times, emission device, flow rate, and current reference evapotranspiration, so that applied water meets the Estimated Total Water Use. Total annual applied water shall be less than or equal to Maximum Applied Water Allowance (MAWA). Actual irrigation schedules shall be regulated by automatic irrigation controllers using current reference evapotranspiration data (e.g., CIMIS) or soil moisture sensor data.
Parameters used to set the automatic controller shall be developed and submitted for each of the following:
(A) the plant establishment period;
(B) the established landscape; and
(C) temporarily irrigated areas.
Each irrigation schedule shall consider for each station all of the following that apply:
(A) irrigation interval (days between irrigation);
(B) irrigation run times (hours or minutes per irrigation event to avoid runoff);
(C) number of cycle starts required for each irrigation event to avoid runoff;
(D) amount of applied water scheduled to be applied on a monthly basis;
(E) application rate setting;
(F) root depth setting;
(G) plant type setting;
(H) soil type;
(I) slope factor setting;
(J) shade factor setting; and
(K) irrigation uniformity or efficiency setting.

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

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

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

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

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

§ 492.13 Irrigation Efficiency.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

EXHIBIT D

GENERAL PLAN POLICIES

PS-2.8 The County shall require that all projects be designed to maintain or increase the site's pre-development absorption of rainfall (minimize runoff), and to recharge groundwater where appropriate. Implementation shall include standards that could regulate impervious surfaces, vary by project type, land use, soils and area characteristics, and provide for water impoundments (retention/detention structures), protecting and planting vegetation, use of permeable paving materials, bioswales, water gardens, and cisterns, and other measures to increase runoff retention, protect water quality, and enhance groundwater recharge.

PS-3.11 In order to maximize urban water conservation measures to improve water use efficiency and reduce overall water demand, the County shall establish an ordinance identifying conservation measures that reduce potable water demand.

PS-3.12 The County shall maximize the use of recycled water as a potable water offset to manage water demands and meet regulatory requirements for wastewater discharge, by employing strategies including, but not limited to, the following:

a. Increase the use of treated water where the quality of recycled water is maintained, meets all applicable regulatory standards, is appropriate for the intended use, and re-use will not significantly impact beneficial uses of other water resources.

b. Work with the agricultural community to develop new uses for tertiary recycled water and increase the use of tertiary recycled water for irrigation of lands currently being irrigated by groundwater pumping.

c. Work with urban water providers to emphasize use of tertiary recycled water for irrigation of parks, playfields, schools, golf courses, and other landscape areas to reduce potable water demand.

d. Work with urban water providers to convert existing potable water customers to tertiary recycled water as infrastructure and water supply become available.

OS-5.6 Native and native compatible species, especially drought resistant species, shall be utilized in fulfilling landscaping requirements.

OS-5.14 Policies and procedures that encourage exclusion and control or eradication of invasive exotic plants and pests shall be established. Sale of such items within Monterey County shall be discouraged.

S-4.28 The County shall provide a list of acceptable fire-resistant plants suited to each of the County's various micro-climates, in accordance with Policy OS-5.14 to avoid invasive species. This list should be developed with the cooperation of the County and fire authorities having jurisdiction, and made available at the Monterey County Planning Department.

EXHIBIT E

COMPARISON TABLE

COMPARISON TABLE				
State Law Landscape Requirements	**2010 General Plan**	**Monterey County Code**	**Coastal Regulations**	**Outside Agencies**
Plant groupings that use similar amounts of water	OS-5.6	18.44 & 18.50	20.144.030.B.2.c & B.5 (NC) 20.144.040.B.9 (NC) 20.145.040.B.9 (BS) 20.145.050.C.2 (BS) 20.146.030.C.1.e (CML) 20.146.040.B.1 (CML) 20.146.050.E.1.d (CML) 20.146.110.A.2 (CML) 20.147.040.C.10 (DMF) 20.147.110.A.2 (DMF)	WRA Ord 3932
Landscape water budget component (maximum amount of water use)	PS-3.11			MPWMD Rule 172
Capture and retention of stormwater onsite to improve water use efficiency and quality	PS-2.8 & PS-3.11	16.14	20.144.070.E.12 (NC)	WRA Ord 3932, Clean Water Act
Automatic irrigation systems and schedules based on climate, terrain, soil type, and other environmental conditions	PS-3.11	18.44 & 18.50	20.145.050.C.3 (BS) 20.146.050.E.1.d (CML) 20.146.110.A.2 (CML)	WRA Ord 3932
Onsite soil assessment and soil management plans to promote healthy plant growth and prevent excessive erosion and runoff, and the use of mulches in shrub areas, garden beds, and landscaped areas where appropriate	PS-2.8	16.12.090	20.144.070.A.3 (NC)	
Use of recycled water	PS-3.12	15.12; 15.16	20.144.070.E.12 (NC) 20.147.110.A.7 (DMF)	WRA Ord 3932
Regional difference, including fire prevention needs	S-4.28	18.10, 18.56	20.144.100.C.2.d (NC) 20.145.080.C.4(BS) 20.146.080.C.1 (CML) 20.147.060.B.1 (DMF)	
Landscape maintenance practices (i.e. water audits)	PS-3.11			MPWMD Rule 172
Reduce irrigation overspray and runoff	PS-3.11		20.145.050.C.3 (BS) 20.146.050.E.1.d (CML) 20.146.110.A.2 (CML)	MPWMD Rule 172
492.6(F) – use of invasive and/or noxious plant species is strongly discouraged	OS-5.14	10.46	20.147.040.C.10 (DMF) 20.147.060.B.1 (DMF	

EXHIBIT F

DISCUSSION DRAFT ENERGY AND WATER EFFICIENT LANDSCAPE ORDINANCE

ORDINANCE No. _____

AN ORDINANCE OF THE COUNTY OF MONTEREY, STATE OF CALIFORNIA, ADDING CHAPTER 16.61 TO THE MONTEREY COUNTY CODE RELATING TO LANDSCAPE DESIGN, WATER CONSERVATION AND ENERGY EFFICIENCY PRACTICES FOR LANDSCAPE AREAS

County Counsel Summary

This ordinance adds Chapter 16.61 to Chapter 16 of the Monterey County Code to address Water and Energy Efficient Landscaping. This ordinance authorizes the promulgation of regulations for certain landscape projects within the County of Monterey. The regulations will require projects to install water efficient planting and irrigation, as well as energy efficient landscape components and design. This ordinance authorizes application fees for the processing of landscape projects, and provides for enforcement and penalties for violations of this ordinance.

The Board of Supervisors of the County of Monterey ordains as follows:

SECTION 1. FINDINGS AND DECLARATIONS.

A. Water supply in Monterey County continues to be the region's primary resource constraint. The potential exists that Monterey County may experience a threat to public health, safety, and welfare due to a dwindling available water supply to meet expanding development demands.

B Assembly Bill 325 (AB 325), the Water Conservation in Landscape Act 1990, was signed into law on September 29, 1990, requiring the California Department of Water Resources (DWR) to develop and adopt a Model Ordinance with provisions for water efficient landscape design, installation, and maintenance by January 1, 1992.

C. Assembly Bill 1881 (AB 1881), the Water Conservation in Landscaping Act of 2006, requires the DWR to draft and adopt an updated State Model Water Efficient Landscape Ordinance based on recommendations of the Landscape Taskforce found within the report entitled Water Smart Landscape for California. Local agencies were required to adopt the updated Model Ordinance or a local landscape ordinance that is at least as effective in conserving water as the updated Model Ordinance by January 1, 2010.

D. On February 5, 2010, the County of Monterey notified the DWR that the County "intends to follow the Department of Water Resources' updated Model Efficient Landscape Ordinance."

E. Adoption of an ordinance that meets the specific needs of the County and is at least as effective in conserving water as the updated Model Ordinance would be most appropriate. Therefore, in accordance with section 65595(c)(1) of the Government Code, Monterey County hereby adopts the Water and Energy Efficient Landscape Ordinance (Landscape Ordinance).

F. In order to provide a document with technical information and a greater understanding of the landscape regulations, the County has developed the Monterey County Landscape Manual, Standards, Guidelines, and Specified Performance Requirements for Landscape Water Use and Irrigation (Landscape Manual) that shall be approved by resolution of the Board of Supervisors. The Landscape Manual is intended to work in conjunction with the Landscape Ordinance.

G. The Landscape Ordinance shall apply county-wide to coastal and non-coastal areas.

H. The Landscape Ordinance is consistent with and supportive of the water conservation measures codified in Chapters 18.44 and 18.50 of the Monterey County Code.

1. Chapter 18.44 of the Monterey County Code requires low water use landscape material (low water use or native plant material, low precipitation sprinkler heads, bubblers, drip irrigation systems and timing devices) as part of new construction in areas of the County served by California American Water Service Company. Projects subject to the Landscape Ordinance will be consistent with Monterey Code Chapter 18.44. Projects that are exempt from the Landscape Ordinance but subject to Chapter 18.44 will not be affected.

2. Chapter 18.50 of the Monterey County Code is applicable to the Greater Salinas Planning Areas, Toro Planning Area, Greater Monterey Peninsula Planning Area, and a portion of the North County Planning Area (including the Coastal Zone). This chapter requires that landscape development for new construction include low water use or native plant material, low precipitation sprinkler heads, bubblers, drip irrigation systems and timing devices. Projects subject to the Landscape Ordinance will be consistent with Monterey Code Chapter 18.50. Projects exempt from the Landscape Ordinance but subject to Chapter 18.44 will not be affected.

I. Adoption of the Landscape Ordinance and Landscape Manual will result in the implementation of the following 2010 General Plan policies:

1. Policy No. OS-5.6 of the 2010 General Plan polices requires utilization of native and native compatible species, especially drought resistant species, in fulfilling landscaping requirements. The Landscape Ordinance implements this policy. The use of such plants reduces water use and maximizes water conservation.

2. Policy Nos. OS-5.14 and S-4.28 of the 2010 General Plan encourages the exclusion of invasive plants and requires the County to provide a list of fire-resistant plants. The Landscape Manual will provide suggested lists implementing these policies.

3. Policy No. PS-2.8 requires all projects to be designed to increase runoff retention, protect water quality, and enhance groundwater recharge through water impoundments, protection and planting of vegetation, use of permeable paving materials, bioswales, water gardens, and cisterns. Techniques such as these and other Low Impact Development (LID) are incorporated into the Landscape Ordinance and Landscape Manual.

4. Policy No. PS-3.11 requires the County to establish an ordinance identifying conservation measures that reduce potable water demand. The primary function of the Landscape Ordinance is to increase water efficiency resulting and to reduce the use of potable water.

5. Policy No. PS-3.12 requires the County to maximize the use of recycled water. An area in which recycled water is used for irrigation is defined as a Special Landscape Area. Applicants who incorporate the use of recycled water for irrigation will receive a "water credit."

J. The County of Monterey has adopted the 2010 California Green Building Standards Code, California Code of Regulations, Title 24, Part 11, also known as CALGreen. The water and energy conservation measures contained in this ordinance are consistent with and will assist in implementing the County's green building requirements.

K. Water use and energy consumption are inherently linked. Implementation of water conservation measures in new and rehabilitated landscapes will result in secondary energy savings associated with the corresponding reduction in demand, production and transport of water resources.

SECTION 2. Section 16.61 of the Monterey County Code is added as follows:

CHAPTER 16.61
STANDARDS FOR LANDSCAPING

Sections:

16.61.010 Purpose.

The purpose of this Section is to provide landscape standards that minimize water use, eliminate water waste, and maximize energy efficiency by requiring low water landscape plantings, irrigation methods, and low energy lighting and ornamental landscape features.

16.61.020 Definitions.

The following definitions apply to this Chapter:

A. "Applied water" means the portion of water supplied by the irrigation system to the landscape.
B. "Backflow prevention device" means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.
C. "California Invasive Plant Inventory" means the California Invasive Plant Inventory maintained by the California Invasive Plant Council.
D. "Certified irrigation designer" means a person certified to design irrigation systems by an accredited academic institution a professional trade organization or other program such as the US Environmental Protection Agency's WaterSense

irrigation designer certification program and Irrigation Association's Certified Irrigation Designer program.

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

F. "Check valve" or "anti-drain valve" means a valve located under a sprinkler head or other location in the irrigation system, to hold water in the system to prevent drainage from sprinkler heads when the sprinkler is off.

G. "Controller" means an automatic timing device used to remotely control valves or heads to operate an irrigation system. A weather-based controller is a controller that utilizes evapotranspiration or weather data to make adjustments to irrigation schedules. A self-adjusting irrigation controller is a controller that uses on-site sensor data (e.g., soil moisture) to adjust irrigation schedules.

H. "Developer installed" means landscaping provided by a developer in conjunction with property improvements such as, but not limited to, remodels/additions, new construction of "speculation" single family homes to be sold, and land divisions. For the purposes of this Chapter, a developer is a private entity undertaking real estate or property development resulting in the sale or lease of a residential product.

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

J. "Ecological restoration project" means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

K. "Energy efficient landscape" means any new or rehabilitated landscape, public or private, that helps a project achieve a minimum 15% reduction in energy use when compared to the State's mandatory energy efficiency standards.

L. "Energy efficient lighting system" means any outdoor landscape lighting system consisting of at least 90 percent ENERGY STAR qualified hard-wired fixtures, solar powered lighting, and/or systems that employ programmable photocontrol or astronomical time-switch controls that automatically switch off when daylight is available.

M. "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.

N. "Estimated Total Water Use" (ETWU) means the total water used for the landscape.

O. "ET adjustment factor" means, except for Special Landscape Areas, a factor of 0.7, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency. A combined plant mix with a site-wide average of 0.5 is the basis of the plant factor portion of this calculation. For the purposes of the

ETAF, the average irrigation efficiency is 0.71. Therefore, the ET Adjustment Factor is (0.7) = (0.5/0.71).

P. "Evapotranspiration rate" means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time.

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

R. "Hardscapes" means any durable material (pervious or impervious).

S. "High water use plant" means any plant categorized as high water need by the water use classification of landscape species guide.

T. "Homeowner installed" means any landscaping either installed by a private individual for a single family residence or installed by a licensed contractor hired by a homeowner for a single family residence. A homeowner, for purposes of this Chapter, is a person who occupies the dwelling he or she owns. This excludes speculative homes, which are not owner-occupied dwellings.

U. "Hydrozone" means a portion of the landscaped area having plants with similar water needs and served by a valve or set of valves with the same schedule. A hydrozone may be irrigated or non-irrigated.

V. "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).

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

X. "Irrigation audit" means an in-depth evaluation of the performance of an irrigation system conducted by a Certified Landscape Irrigation Auditor. An irrigation audit shall include, 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.

Y. "Irrigation efficiency" (IE) means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum average irrigation efficiency for purposes of this ordinance is 0.71. Greater irrigation efficiency can be expected from well-designed and maintained systems.

Z. "Irrigation meter" means a separate meter that measures the amount of water used for items such as lawns, washing exterior surfaces, washing vehicles, or filling pools.

AA. "Landscape architect" means a person who holds a license to practice landscape architecture in the state of California Business and Professions Code, Section 5615.

BB. "Landscape area" or "landscape project" means all the planting areas, turf areas, and water features in subject to the Maximum Applied Water Allowance calculation. Planted areas dedicated to agricultural cultivation and private vegetable gardens and orchards are not included. 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).

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

EE. "Landscape Manual" means the County of Monterey Landscape Manual – Standards and Specified Performance Requirements for the Landscape Water Use and Irrigation prepared pursuant to Section 16.61.040 of this Chapter.

FF. "Landscape Package (application)" means the landscape materials required to be submitted for review and approval by the Director of the RMA-Planning Department pursuant to Section 16.61.050 of this Chapter.

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

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

II. "Low volume irrigation" means the application of irrigation water at low pressure through a system of tubing or lateral lines and low-volume emitters such as drip, drip lines, and bubblers. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

JJ. "Low water use plant" means any plant categorized as low water need by the water use classification of landscape species (WUCOLS) guide.

KK. "Main line" means the pressurized pipeline that delivers water for the water sources to the valve or outlet.

LL. "Maximum Applied Water Allowance" (MAWA) means the upper limit of annual applied water for the established landscaped area. It is based upon the area's reference evapotranspiration, the ET Adjustment Factor, and the size of the landscape area.

MM. "Microclimate" means the climate of a small, specific area that may contrast with the climate of the overall landscape area due to factors such as wind, sun exposure, plant density, or proximity to reflective surfaces.

NN. "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.

OO. "Moderate water use plant" means any plant categorized as moderate water need by the water use classification of landscape species (WUCOLS) guide.

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

QQ. "New construction" means, for the purposes of this ordinance, a new public or private building with a landscape or other new landscape, such as a park, playground, or greenbelt without an associated building.

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

SS. "Overhead irrigation systems" means systems that deliver water through the air (e.g., pop-ups, impulse sprinklers, spray heads, rotors, micro-sprays, etc).

TT. "Overspray" means the irrigation water that is delivered beyond the landscape area, wetting pavements, walks, structures, or other non-landscaped areas.

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

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

WW. "Plant factor" or "plant water use factor" is a value, when multiplied by ETo, estimates the amount of water needed by plants. For purposes of this ordinance, the plant factor range for very low water use plants is less than 0.1, the plant factor range for low water use plants is 0.1 to 0.3, the plant factor range for moderate water use plants is 0.4 to 0.6, and the plant factor range for high water use plants is 0.7 to 1.0. Plant factors cited in this ordinance are derived from the Department of Water Resources 2000 publication "Water Use Classification of Landscape Species."

XX. "Planting Plan" are plans consistent with the requirements outlined in Section 16.61.060 of this Chapter.

YY. "Precipitation rate" means the rate of application of water measured in inches per hour.

ZZ. "Rain sensor" or "rain sensing shutoff device" means a component which automatically suspends an irrigation event when it rains.

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

BBB. "Recreational Area" means public areas within residential development projects or recreational facilities dedicated to active play such as parks, sports fields and golf courses where natural turf provides a playing surface.

CCC. "Reference evapotranspiration" or "ETo" means a standard measurement of environmental parameters which affect the water use of plants. ETo is expressed in inches per day, month, or year, 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.

DDD. "Rehabilitated landscape" means any re-landscaping project that requires a permit, plan check, or design review, and the modified landscape area is equal to or greater than 2,500 square feet and is at least 50% of the total landscape area.

EEE. "Run off" 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.

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

GGG. "Soil texture" means the classification of soil based on its percentage of sand, silt, and clay.

HHH. "Special Landscape Area" (SLA) means an area of the landscape irrigated with recycled water, water features using recycled water, and areas dedicated to active play such as parks, sports fields, golf courses, and where natural turf provides a playing surface.

III. "Sprinkler head" means a device which delivers water through a nozzle.

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

KKK. "Turf" means a ground cover surface of mowed grass and does not include artificial turf surfaces. Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and Tall fescue are cool-season grasses. Bermuda grass, Kikuyu grass, Seashore Paspalum, St. Augustine grass, Zoysia grass, and Buffalo grass are warm-season grasses.

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

MMM. "Water conserving plant species" means a plant species identified as having a low plant factor.

NNN. "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 control measures 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.

OOO. "Water use classification of landscape species guide" (WUCOLS) means the water use classification of landscape species guide published by the University of California Cooperative Extension, the California Department of Water Resources, and the United States Bureau of Reclamation, as it currently exists or may be amended in the future.

PPP. "Watering window" means the time of day irrigation is allowed.

QQQ. "Weather-based self-adjusting irrigation controller" means a system component that uses local weather and landscape conditions to automatically adjust irrigation schedules to actual conditions on the site or historical weather data.

RRR. "Xeriscape" means a landscaping method developed especially for arid and semiarid climates that utilizes water-conserving techniques (such as the use of drought-tolerant plants, mulch, and efficient irrigation) to balance hydrology at the parcel level.

16.61.030 Applicability.

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

(1) New construction and rehabilitated landscape projects with landscape areas equal to or greater than 2,500 square feet for Public Agency developments in all zoning districts, requiring a grading permit, building permit, or design review.

(2) New construction and rehabilitated landscape projects with landscape areas equal to or greater than 2,500 square feet for non-residential private developments in non-residential zoning districts, requiring a grading permit, building permit, or design review.

(3) New construction and rehabilitated landscapes with landscape areas greater than 2,500 square feet for all residential projects in all zoning districts which allow residential uses that is developer installed, requiring a grading permit, building permit, or design review.

(4) New construction and rehabilitated landscapes with landscape areas greater than 5,000 square feet for all residential projects in all zoning districts which allow residential uses that is homeowner installed, requiring a grading permit, building permit, or design review.

(5) Existing landscapes that were installed before January 1, 2010 and are over one acre in size limited to the regulations contained in Section 16.61.140 of this Chapter.

(6) New and rehabilitated cemeteries shall comply with the requirements of this ordinance to the extent they require a water efficient landscape worksheet, an irrigation maintenance schedule, an irrigation audit, an irrigation survey, and an irrigation water use analysis (Cemetery Landscape Package). Such Cemetery Landscape documents shall be submitted to the extent that a new or rehabilitated cemetery is subject to a grading permit, building permit, or design review.

B. Landscaping for parking areas shall be consistent with the requirements of the designated zoning district and Sections16.61.060; 16.61.070; 161.61.080; and 16.61.090 of this Chapter.

C. Exceptions. 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;
(4) Plant collections, as part of botanical gardens and arboretums open to the public;
(5) Agricultural cultivation activities;
(6) Construction of structures that do not include changes in existing landscape;
(7) Changes in use of an existing structure that does not include changes to landscaping;
(8) Private edible plant gardens and/or orchards for personal and individual consumption;
(9) Constructed wetlands used for on-site wastewater treatment or stormwater control measures that are not irrigated and used solely for water treatment or stormwater retention;
(9) Natural areas including, but not limited to: open space, native vegetative areas, and pervious or non-pervious hardscapes that do on require a permanent irrigation system;
(10) Erosion control activities that do not require permanent irrigation systems such as hydroseeding; and
(11) Existing cemeteries.

16.61.040 Landscape Manual.

The Board of Supervisors shall adopt, and may from time to time amend, the County of Monterey Landscape Manual – Standards, Guidelines, and Specified Performance Requirements for Landscape Water Use and Irrigation (Landscape Manual) establishing guidelines to explain and implement this Chapter. The Landscape Manual shall clearly explain the specific procedures and technical requirements of this Chapter. The Landscape Manual shall contain the elements of the Landscape Documentation Package, Water Efficient Landscape Worksheet, Soil Management Report, Landscape Design Plan, Irrigation Design Plan, Grading Design Plan, and Certificate of Completion. Should any provisions of the Landscape Manual conflict with any provisions of this Chapter, the provisions of this Chapter shall prevail.

16.61.050 Submittal Requirements of Landscape Package.

Prior to the issuance of grading permit or building permits, and prior to construction, a Landscape Package shall be submitted for review to the RMA-Planning Department. The Landscape Package shall contain all information and documentation, in sufficient detail, as specified in the Landscape Manual. The Director of the RMA-Planning Department shall approve the package once it has been verified that the proposed landscape project complies with the provisions of this Chapter, the provisions of the Landscape Manual, other applicable requirements of the Monterey County Code, and the conditions of any applicable land use permit or other entitlement.

16.61.060 Planting Plans.

The Planting Plan shall be submitted by the applicant as part of the Landscape Package. For the efficient use of water, the plan shall meet all the requirements, shown in sufficient detail, listed in the Landscape Manual, other requirements of the Monterey County Code, and the conditions of any land use permit or other entitlement.

A. The planting plan shall meet the following requirements:

(1) Planting plans shall be drawn by a licensed architect, a licensed contractor, or any other person authorized to design a landscape.

(2) Include grading design that minimizes soil erosion, runoff, and water waste.

(3) Turf shall be limited to 20% of the landscape area or up to 1,500 square feet (whichever is lower), unless the turf area is designated as a Special Landscape Area and is dedicated to active play such as parks, sports fields, golf courses, and where natural turf provides a playing surface. Planting of turf is prohibited in the following conditions:

(a) Slopes exceeding ten (10) percent;

(b) Planting areas eight (8) feet wide or less; and

(c) Street medians, traffic islands, planter strips, or bulb-outs of any size.

(4) All non-turf plants shall be selected, spaced, and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site.

(5) Invasive plants are strictly prohibited and eradication of invasive plants is highly encouraged.

(6) Selected plants shall include the use of native and native compatible species.

(7) Landscape planting shall include the use of drought resistant species.

(8) Landscape planting shall include the use of fire resistant plants plant species and shall be consistent with fire safe landscaping required by the designated Fire District.

(9) Plants with similar water use needs shall be grouped together in distinct hydrozones. Where irrigation is required, the distinct hydrozones shall be irrigated with separate valves.

(10) Plants with low and high water use may not be included in the same hydrozone.

B. Verification. Planting plans shall contain the following statement: "I _____ certify that this planting plan complies with all Monterey County landscaping requirements including, but not limited to, the use of native drought tolerant, non-invasive species, and limited turf." The verification shall be signed by a licensed landscape architect, a licensed landscape contractor, or any other person authorized to design a landscape.

16.61.070 Irrigation Design Plans.

The Irrigation Design Plan shall be submitted by the applicant as part of the Landscape Package. For the efficient use of water, an automated irrigation system shall meet all the requirements, shown in sufficient detail, listed in the Landscape Manual, other requirements of the Monterey County Code, conditions of any land use permit or other entitlement, and be in compliance with the manufacturer's recommendations.

A. All irrigation design and specifications included in the irrigation plans shall meet the following requirements:

(1) Irrigation plans shall be drawn by a licensed architect, a licensed contractor, a certified irrigation designer, or any other person authorized to design a landscape;

(2) All irrigation systems shall be designed to prevent runoff, low head drainage, overspray, or other similar conditions where irrigation water flows onto non-targeted areas such as adjacent properties, hardscapes, roadways, or structures.

(3) The irrigation system and its related components shall be planned and designed to allow for proper installation, management and maintenance.

(4) The design of the irrigation system shall conform to the hydrozones delineated on the planting plans.

(a) Separate valves shall be used to irrigate hydrozones with high water use plants and moderate or low water use plants.

(5) All irrigation systems shall be designed and installed to meet irrigation efficiency criteria as described in the Maximum Applied Water Allowance (MAWA) and subject to the requirements listed in 16.61.090 of this Chapter.

(6) Irrigation system features and design shall be consistent with the Landscape Manual.

B. Verification. The following statement shall be included within the irrigation plans: "I _____ certify that this landscaping plan complies with all Monterey County landscaping requirements including, but not limited to, the use of low flow and water conserving irrigation fixtures." The verification shall be signed by a licensed landscape architect, a licensed landscape contractor, or any other person authorized to design an irrigation plan.

16.61.080 Water Efficient Landscape Requirements.

A Water Efficient Landscape Worksheet shall be submitted by the applicant as part of the Landscape Package. To ensure landscape projects conserve water to the maximum extent possible, information included within the Water Efficient Landscape Worksheet shall be consistent with the requirements listed in the Landscape Manual, other requirements of the Monterey County Code, and conditions of any land use permit or other entitlement.

A. Water budget calculations shall meet the following requirements:

(1) All water features shall be included in the high water use hydrozone.

(2) Temporarily irrigated areas shall be designated as low water use hydrozones.

(3) Water budget calculations for (MAWA) shall be calculated using the formula found in Section 5.B or Appendix B of the Landscape Manual.

(a) Special Landscape Areas, as defined in Section 16.61.020.00 of this Chapter, and areas irrigated with recycled water are subject to the MAWA with an Evapotranspiration Adjustment Factor (ETAF) not to exceed 1.0.

(4) The calculation of a project's (ETWU) shall be performed using the formula found in Section 5.D or Appendix B of the Landscape Manual.

B. For calculation of the MAWA and ETWU, the project applicant shall use the annual evapotranspiration (ETo) values located within the Landscape Manual.

C. Landscape projects subject to approval of this Chapter shall not apply water to the landscape in excess of the maximum amount of water allowed. The Estimated Total Water Use shall not exceed the Maximum Applied Water Allowance.

D. Inefficient landscape irrigation is prohibited from conditions such as runoff leaving the target landscape due to low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, parking lots, or structures.

E. Rain gardens, cisterns and other landscapes features and practices that increase rainwater capture and create opportunities for infiltration and/or onsite storage are recommended.

F. Landscape projects subject to the provisions of this Chapter shall incorporate the use of recycled water for irrigation when, in the determination of the County, recycled water is available and connection to recycled water is feasible.

(1) All recycled water irrigation systems shall be designed and operated in accordance with all State and county laws and regulations related to recycled water use.

(2) The installation of recycled water irrigation systems shall allow for the current and future use of recycled water, unless a written exemption has been granted pursuant to this subdivision F.

(3) Irrigation systems and decorative water features shall use recycled water unless a written exemption has been granted by the local water purveyor stating that recycled water meeting all public health codes and standards is not available and will not be available for the foreseeable future.

16.61.090 Energy Efficiency.

A. Energy use and conservation measures within the landscape component of a building project shall be calculated as part of the building's overall energy efficiency budget pursuant to Chapter 18.12 of the Monterey County Code, Green Building Standards Code.

B. Landscape lighting shall be designed for energy efficiency and utilize one or both of the following:

(1) ENERGY STAR qualified hard-wired fixtures.

(a) All hard-wired lighting shall employ programmable photocontrol or astronomical time-switch controls that automatically switch off when daylight is available.

(2) Solar powered lighting systems.

C. Landscape lighting exceptions. The following exterior lighting is exempt from the requirements of this Chapter:

(1) Lighting required by a health of life safety statute ordinance or regulation, including but not limited to emergency lighting.

(2) Exterior lighting for permanent buildings, structures, security, and signs.

(3) Lighting used in or around swimming pools, water features or other locations subject to Article 680 of Title 24, Part 3, *California Electrical Code*.

16.61.100 Soils Management Report.

A soils management report shall be completed by the project applicant or his/her designee and submitted as part of the Landscape Package. In order to promote healthy plant growth and prevent excessive erosion and runoff, the soil management report shall be consistent with the required information outlined in this Section and the applicable sections of the Landscape Manual.

A. The soils management report shall be prepared by a certified lab to evaluate soils relative to horticulture.

B. Soils samples shall be from the site and analyzed to the extent that quality top soil, soil limitations, and soil composition information necessary for planting has been identified.

C. The soils management report shall include recommendations for soil amendments based on the conditions of the site and the intended planting.

D. The soils analysis report shall be used in conjunction with the preparation of the planting and irrigation plans.

16.61.110 Application Fees.

A. The Board of Supervisors shall establish a schedule of fees for the processing of Landscape Package applications.

B. No Landscape Package application shall be deemed complete and processing shall not commence on any landscape plan check application until all required fees and/or deposits have been paid.

16.61.120 Inspections, Scheduling, and Maintenance.

A. Inspections.

(1) Prior to the final of grading or building permits, landscape projects subject to the provisions of this Chapter are required to pass a final inspection by the RMA-Director of Planning (Director) or his designee to verify compliance with the approved Landscape Package.

(2) No landscape project applicant shall be deemed to have complied with the provisions of this Chapter until a final inspection of the work has been completed by the Director or his designee.

(3) Inspections shall not be construed to approve a violation of the provisions of this code. Inspections presuming to give authority to violate or cancel the provisions of this Chapter or other provisions of this code shall not be valid.

B. Irrigation scheduling. 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. The irrigation schedule shall be consistent with the requirements of this Section, the applicable sections of the Landscape Manual, and include the following:

(1) The irrigation schedule shall be developed by a landscape architect, landscape contractor, or any other person authorized to install irrigation equipment.

(2) The irrigation schedule shall factor irrigation run times, emission device, flow rate, and current reference evapotranspiration, so that the applied water meets the Estimated Total Water Use.

(3) The irrigation schedule shall be submitted with the landscape certificate of completion pursuant to Section 16.61.130 of this Chapter.

C. Landscape planting and irrigation maintenance. In order to maintain plant health and functioning irrigation equipment, a landscape planting and irrigation maintenance schedule shall be developed incorporating the requirements of this Section, the applicable sections of the Landscape Manual, and include the following:

(1) A regular maintenance schedule shall be developed by a landscape architect, landscape contractor, or any other person authorized to design and maintain landscape planting and irrigation.

(2) A regular maintenance schedule shall include, but is not limited to routine inspection, adjustment, and repair of the irrigation system and its components.

(3) A regular maintenance schedule shall make provisions for irrigation inspections, systems tune-up, and system tests with distribution uniformity preventing overspray or run off that causes overland flow.

(4) A regular maintenance schedule shall be submitted with the landscape Certificate of Completion consistent with Section 16.61.130 of this Chapter.

D. Obligations of Assignees or Successors.

(1) All required landscaping shall be maintained for the life of the project in healthy condition, free from disease, pests, weeds, and trash.

(2) Plants lost due to disease, destruction, or lifecycle shall be replaced and shall comply with all adopted standards for size, species, and irrigation.

16.61.130 Certificate of Completion.

Upon completion of the landscape project, but prior to occupancy or final of grading or building permits, the applicant shall submit a certificate of completion to the RMA-Planning Department. The certificate of completion shall be consistent with the requirements of this Section and all applicable sections of the Landscape Manual.

A. Certificate of Completion – Form and Content.
   (1) The certificate of completion shall include: project information, certification for installation of the landscape planting and irrigation, the proposed irrigation scheduling, an irrigation audit, the proposed schedule for landscape planting and irrigation maintenance, and verification of implementing recommendations of the soils management report.
   (2) A copy of the approved certificate of completion form can be found in the Landscape Manual.

B. Signature of Certificate of Completion; as-built plans.
   (1) The certificate of completion shall be signed by either the signer of the planting plan, the person signing the irrigation plan, or the licensed landscape contractor who installed the landscape.
   (2) If significant changes were made during installation, as-built plans shall be included with the certification. As-built plans must be in conformance with Sections 161.61.060, 16.61.070, 16.61.080 and 16.61.090 of this Chapter.

16.61.140 Provisions for Existing Landscapes.

Existing landscapes that were installed before January 1, 2010 and are over one acre in sizes shall meet the following requirements and be consistent with the Landscape Manual.

A. Metered landscapes. Existing landscapes that have a meter shall be subject to County administered programs that include, but not limited to, irrigation water use analyses, irrigation surveys, and irrigation audits to evaluation 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.

B. Non-metered landscapes. Existing landscapes that do not have a meter shall be subject to County administered programs that include, but not limited to, irrigation surveys and irrigation audits to evaluate water use and provide recommendations as necessary in order to prevent water waste.

16.61.150 Public Education.

The Landscape Manual shall contain information promoting the efficient use of water in landscapes, and the benefits of doing so. The Landscape Manual shall include information to owners of new, single-family residential homes regarding the design, installation, management, and maintenance of water efficient landscapes.

16.61.160 Enforcement and Penalties.

A. It shall be the duty of the RMA-Planning Director to enforce the provisions of this Chapter. All departments, officials and public employees vested with the duty or authority to issue permits or licenses shall not issue a permit or license for uses, buildings or purposes in conflict with the provisions of this Chapter and any such permit or license issued in conflict with the provisions of this Chapter shall be null and void. The RMA-Director of Planning may delegate enforcement responsibilities to other County employees.

B. Any landscaping that is installed, constructed, altered, enlarged, converted, moved, or maintained contrary to the provisions of this Chapter, or failure to comply with any of the conditions of a permit or variance granted to implement this Chapter is declared to be unlawful and shall be subject to 18.52 (Enforcement – Administrative and Legal Procedures – Penalties) of the Monterey County Code.

SECTION 3. SEVERABILITY. If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be invalid, such decision shall not affect the validity of the remaining portions of this ordinance. The Board of Supervisors hereby declares that it would have passed this ordinance and each section, subsection, sentence, clause and phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, or phrases be declared invalid.

SECTION 4. This ordinance shall become effective on the thirty-first day following its adoption.

PASSED AND ADOPTED on this ___ day of _____, 20__, by the following vote:

AYES: Supervisors
NOES:
ABSENT:
ABSTAIN:

_____
Louis Calcagno, Chair
Monterey County Board of Supervisors

ATTEST: Deputy

GAIL T. BORKOWSKI
Clerk of the Board of Supervisors

By:_____

APPROVED AS TO FORM:

WENDY S. STRIMLING
Senior Deputy County Counsel

EXHIBIT G

DRAFT MONTEREY COUNTY LANDSCAPE MANUAL

MONTEREY COUNTY LANDSCAPE MANUAL

Standards, Guidelines, and Specified Performance Requirements for Landscape Water Use and Irrigation

Draft March 25, 2014 – AQ

DRAFT

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SECTION 1 – INTRODUCTION

A. Purpose

The *Standards, Guidelines and Specified Performance Requirements for Landscape Water Use and Irrigation* (Landscape Manual) was adopted by a separate resolution by the Monterey County Board of Supervisors and will be amended from time to time to address new requirements or technology, and to clarify and provide guidance related the County's process and procedures for landscaping. The landscape manual is specifically authorized as an implementing tool in the County of Monterey's Ordinance No. ____ entitled "An Ordinance of the Board of Supervisors of the County of Monterey adding Chapter 16.61 – Water and Energy Efficient Landscape Ordinance (or Landscape Ordinance) to the Monterey County Code to regulate water and energy efficiency in landscaping." The information within the Landscape Manual will provide property owners a greater understanding of the importance and benefits in efficient use of water and energy in landscaping.

The purpose of this manual is to provide applicants with comprehensive guidance to comply with the County's requirements for landscaping activities, giving a clear explanation of specific procedures and related technical information for landscape and irrigation projects subject to the Landscape Ordinance. In addition, the manual shall serve as a tool to educate the public in promoting the efficient use of water in landscapes and the benefits in doing so.

B. Appendices

Appendices to this manual have been incorporated to provide applicants with additional information and the required forms and calculation formulas needed to meet the water efficiency requirements of the Landscape Ordinance.

The appendices which will be updated periodically include:

The *Landscape Package Application and Submittal form.* This form has been approved by the Director of the RMA-Planning Department and will include all the project information necessary for submitting a landscape package to the County, as well as provide applicants with a helpful checklist of the required documents for submittal.

The *Water Efficient Landscape Worksheet.* The Water Efficient Landscape Worksheet will be completed by the applicant in order to demonstrate how the project is consistent with the water efficient requirements of the Landscape Ordinance. The Water Efficient Landscape Worksheet includes four components: the Hydrozone Information Table (used to itemize plants relative to water use), the mathematical formula to be used to calculate a project's Maximum Applied Water Allowance (MAWA) which calculates the maximum water use allowed based on the landscape area and amount of water typically evaporated from soils and plants, the Hydrozone/Plant Factor Calculation worksheet (used to provided the data needed to calculate the estimated water use), and the mathematical formula used to calculate a project's Estimated Total Water Use (ETWU), preformed to calculate the total amount of water used in a landscape project.

Certificate of Completion. In order to ensure the landscape planting and irrigation installation has been completed per the approved plans, the applicant will be required to submit a Certificate of Completion. As part of the Certificate of Completion, the applicant will also be required to include an irrigation audit and a regular planting and irrigation maintenance schedule.

Glossary. The definitions included in the Landscape Ordinance are also included in this manual.

C. Summary of Landscape Package Review and Process

The information below provides a general guideline for applicants, illustrating the process for submittal, review, approval, and maintenance of landscape projects subject to the Landscape Ordinance:

Step 1 – Landscape Design and Concept

Once an applicant has determined that their proposed project is subject to the Water and Energy Efficient Landscape Ordinance (see Section 2 of this manual), additional information should be taken into account prior to preparing a landscape design as it is important to address all requirements related to landscaping comprehensively. Additional information may include requirements of the Landscape Ordinance, this Landscape Manual, policies contain in any applicable Area or Land Use Plans, Zoning and other Ordinances, and conditions of approval for related discretionary permits. For example, water and energy conservations requirements must be aligned with fuel management and tree removal requirements. In addition, the plant palette selected must be consistent with the list of invasive plants to be avoided.

Step 2 – Documents Required for Submittal

Projects subject to the Landscape Ordinance are required to submit a detailed landscape package to the RMA-Planning Department for review and approval prior to installation. For discretionary permits (such as a subdivision or a Use Permit), submittal of a conceptual landscape plan is typically required with the discretionary application. In such cases, the detailed landscape package must be consistent with the conceptual landscape plan previously with the discretionary permit.

The following is a list of the required documents that will need to be included within the landscape package (please refer to the specific Section or Appendix cited for further detail and explanation):

- Landscape Application Form (see Appendix A).
- Planting Plan (see Section 4).
- Irrigation Plan (see Section 6).
- Soils Management Report (see Section 7).
- Water Efficiency Landscape Worksheet (see Section 5 and Appendix B)
- Energy efficiency information (Section 8).

Step 3 – Approval of the Submitted Landscape Package

Prior to the issuance of a ministerial permit (such as a grading or building permit) or design review, the landscape package must be approved. Once the package has been reviewed by the RMA-Planning Department, and any necessary corrections have been made, the final landscape and irrigation plans will be signed, stamped approved by the County, and a "Job Copy" returned to the applicant. Installation of the landscaping should not proceed until this approval is complete.

Step 4 – Landscape Installation Requirements

Landscaping and irrigation must be installed in conformance with the plans approved by the RMA-Planning Department. Prior to final of any ministerial permit (such as a grading or building permit), the RMA-Planning Department will conduct a site inspection to verify consistency with the approved plans. In addition, the applicant shall submit a Certificate of Completion (see Section 10 and Appendix D). If during installation the applicant needs to modify the planting and/or irrigation beyond what can be considered substantial conformance with what was approved, and the modification is accepted by the Landscape Architect/Designer of record, the applicant will be required to submit "as-built" plans to the RMA-Planning Department along with a statement of why the modification was necessary.

Step 5 – Continued Maintenance

Landscape areas and irrigation equipment are required to be maintained in accordance with the Landscape Ordinance and this manual. As stated previously, the applicant will be required to submit a Certificate of Completion which will include information on the continued maintenance for landscape planting and irrigation equipment. If the landscape and/or irrigation system is not properly maintained the project owner could be subject to a code violation by the County.

SECTION 2 – APPLICABILITY

The Water and Energy Efficiency Landscape Ordinance applies to landscape areas for certain project types meeting the applicability thresholds. The landscape area of a project is considered to be all the areas on a property that is dedicated to landscaping, unless otherwise found to be exempt (see subsection E). Project types are separated into three main categories: 1) public agency projects, 2) non-residential private development projects, and 3) residential private development projects, with residential private development projects further divided into sub-categories.

A. Public Agency Projects

Public agency projects include any use or construction undertaken by public agencies (e.g., local municipalities and Caltrans) within any zoning district. These projects are financed and constructed by the public agency for recreational, employment, and health and safety uses generally for the community use. Some examples of these types of projects include:

- Public buildings such as municipal buildings (Monterey County Government Center, Monterey County Emergency Center, Juvenile Hall), schools, and hospitals (Natividad Medical Center).

- Infrastructure related to transportation such as the construction and maintenance of roads, bridges, and bikeways.
- Public spaces such as parks, public squares, libraries, and parking lots.

The applicability development thresholds that trigger the requirement to comply with the Landscape Ordinance for public agency projects are:

- The construction of a new building where the landscaped area is 2,500 or more square feet requiring a grading permit, building permit, or design review:
- New landscape areas not associated with any buildings that are 2,500 square feet or more requiring a grading permit, building permit, or design review: or
- Rehabilitated (re-landscaping) projects that require a grading permit, building permit, or design review and the modified area is 2,500 square feet or more ***and*** is at least 50% of the existing landscaped area.

B. Private Development Projects – Non-Residential

Non-residential private development projects include any use or construction undertaken by private citizens for non-residential type uses in commercial, industrial, and agricultural zoning districts. This development is typically privately funded and results in some a personal or economical benefit. Some examples of these projects include:

- Commercial developments consistent with commercial designated zoning districts such as retails stores, convenience markets, restaurants, hotels and motels, and service centers.
- Industrial developments consistent with industrial designated zoning districts such as warehouses, contractor storage yards, manufacturing facilities, and processing plants.
- Agricultural developments consistent with agricultural zoning districts such as agricultural support facilities, agricultural processing plants, farm equipment storage facilities, fertilizer plants and yards, and trucking operations and facilities.

- Mixed use developments such as projects that include both commercial and residential uses on one project site.

The applicability development thresholds for private development projects consisting of non-residential uses are:

- Construction of a new building with a landscaped area of 2,500 square feet or more requiring a grading permit, building permit, or design review;
- Installation of new landscape areas not associated with any buildings that are 2,500 square feet or more requiring a grading permit, building permit, or design review; or
- Rehabilitated (re-landscaping) projects that require a grading permit, building permit, or design review and the modified area is 2,500 square feet or more ***and*** is at least 50% of the existing landscaped area.

C. Private Development Projects – Residential

Private residential development projects are residential developments within residential zoning districts and those districts which allow residential uses. This category of projects is further defined into two sub-categories: developer installed and homeowner installed.

1. Developer installed

Developer installed projects are financed and undertaken by a private entity or business within a residential zoning district, or those districts which allow residential uses, resulting in the sale or lease of a residential product. Some examples of these projects include:

- Single family dwellings that are speculation homes or track homes, multifamily dwellings (condos, townhomes, and apartment complexes), and residential subdivisions.

The applicability development thresholds for developer installed private development projects consisting of residential uses are:

- Construction of a new building(s) with a landscape area(s) of 2,500 square feet or more requiring a grading permit, building permit, or design review. This includes single family home developments in which the combined area of multiple or individual yards totals at least the threshold amount;
- Installation of new landscape areas not associated with any buildings consisting of 2,500 square feet or more requiring a grading permit, building permit, or design review; or
- Rehabilitated (re-landscaping) projects that require a grading permit, building permit, or design review and the modified area is 2,500 square feet or more ***and*** is at least 50% of the existing landscaped area.

2. Homeowner installed

Homeowner installed projects are individual single family homes within a residential zoning district, or those districts which allow residential uses, where the project is financed and undertaken by the owner of the property. Some examples of these projects include:

- Single family dwellings, accessory dwelling units, and accessory structures where the owner resides on the property or rents or leases the property to another individual/family.

The applicability development thresholds for homeowner installed private development projects consisting of residential uses are:

- Construction of a new building(s) with a landscape area(s) 5,000 square feet or more requiring a grading permit, building permit, or design review;
- Installation of new landscape areas not associated with any buildings that are 5,000 square feet or more requiring a grading permit, building permit, or design review; or

- Rehabilitated (re-landscaping) projects that require a grading permit, building permit, or design review and the modified area is 5,000 square feet or more ***and*** is at least 50% of the existing landscaped area.

D. Additional Landscaping Subject to Portions of the Landscape Ordinance

There are two types of landscape projects that are subject to specific sections of the Landscape Ordinance.

1. Existing Landscapes

Existing landscapes that were installed before January 1, 2010 and are over and acre in size are subject to programs that do not exist.

2. New and Rehabilitated Cemeteries

New and rehabilitated cemeteries that require a grading permit, building permit, or design review are required to comply with the Landscape Ordinance and are subject to submit as limited landscape package referred to as a Cemetery Landscape Package. The Cemetery Landscape Package contains the following documents:

- Water Efficient Landscape Worksheet
- Irrigation Maintenance Schedule
- Irrigation audit
- Irrigation Survey
- Irrigation Water Use Analysis

E. Exempt Landscaping

Projects exempt from the requirements of the Landscape Ordinance and the Landscape Manual includes:

- Landscaping projects on registered local, state, or federal historical sites,
- Ecological restoration projects (e.g. sites altered to establish a defined, indigenous, historic ecosystem) that do not require a permanent irrigation system;
- Mined-land reclamation projects (surface mining operations with an approved reclamation plan) that do not require a permanent irrigation system;
- Plant collections, as part of botanical gardens and arboretums open to the public;
- Agricultural cultivation activities;
- Construction of structures that do not include changes in existing landscape;
- Changes in use of an existing structure that does not include changes to landscaping;
- Private edible plant gardens and/or orchards for personal and individual consumption;
- Constructed wetlands used for on-site wastewater treatment or stormwater control measures that are not irrigated and used solely for water treatment or stormwater retention;
- Natural areas including, but not limited to: open space, native vegetative areas, and hardscapes that do on require a permanent irrigation system;
- Erosion control activities that do not require permanent irrigation system such as hydroseeding; and
- Existing cemeteries.

SECTION 3 – LANDSCAPE PACKAGE

A. General Requirements

For projects subject to the Landscape Ordinance, a Landscape Package is required to be submitted for review to the RMA-Planning Department. The Director of the RMA-Planning Department will approve the package once staff has verified that the proposed landscape plans and other materials comply with the provisions of the Landscape Ordinance, Landscape Manual, other applicable provisions or codes, as well as the conditions of approval for any applicable land use permit or other discretionary approval related to the specific project.

B. Submittal Requirements

A complete Landscape Package includes the following components which are described in more detail in the referenced sections of this manual:

- Landscape Package Application and Submittal Form (see Appendix A) containing the following information:
    - Project Applicant/Property Owner and contact information
    - Project Address, Assessor's Parcel Number, and vicinity map
- Planting Plan (see Section 4)
- Irrigation Plan (see Section 6)
- Water Efficient Landscape Worksheet including water budget calculations for Maximum Applied Water Allowance (MAWA) and Estimated Total Water Use (ETWU) (see Section 5 and Appendix B)
- Soil Management Report (see Section 7)

SECTION 4 – PLANTING PLAN REQUIREMENTS

For the efficient use of water, landscapes need to be carefully designed and planned for the intended function of the project. Planting plans are required to be prepared by a licensed landscape architect, a licensed landscape contractor, or any other person authorized to design a landscape and will be used in conjunction with approved irrigation plans, as the final landscape construction plans for the project.

The planting plan is essentially a typical site plan that also depicts the existing and proposed conditions of the landscape area. The plan should show the specific locations of all proposed planting areas and the identification of the species and sizes of the plant materials to be installed. It also needs to depict existing vegetation to be retained and/or removed. If existing trees are to be removed, such removal must be in conformance with County tree removal requirements and any required tree removal permits must be obtained before tree removal takes place. In addition, the planting must be in conformance with Fuel Management/Fire Hazard requirements of the adopted California Fire Code and Section 18.10 (Fire Code) of the Monterey County Code.

In order to provide applicants with a simplistic format, the information to be included in the planting plan has been broken up into six separate content sections: general contents and requirements; planting areas and palette; existing vegetation; planting restrictions; grading, soils amendments, conditioning, and mulching; and other landscape design features.

A. General Requirements and Contents of the Planting Plan

The planting plan, drawn at a scale that is clearly legible, should include the following information:

- Project Information:
    - Project Applicant/Property Owner and contact information
    - Project Address, Assessor's Parcel Number, and vicinity map
    - Total square feet of the landscape area (new and existing)
    - Project type (e.g., new, rehabilitated, public, private, residential)
    - Water supply for the project. Identify the water purveyor if the applicant is not served by a private well and location of connection point.
- North arrow and scale.
- Existing conditions such as grades, existing vegetation including trees, property lines, right-of-ways, drainage easements, utilities and utility easements, streets, driveways, walkways, and other paved areas (pervious and/or impervious).
- Existing improvements located on the site including all buildings and structures that are to remain.
- Any proposed new structures such as buildings, accessory buildings, fences, and decks.
- All hydrozones depicted as low, moderate, or high and each hydrozone identified by number, letter, or other method.
- Any required Fuel Management/Fire Hazard zones.
- Natural features to remain, including rock outcroppings, existing native and ornamental trees, shrubs, etc.
- Any proposed outdoor elements including such elements as platforms, planting areas, recreational areas/features, walkways, patios, walls, and water features.
- Any parking areas that include existing or proposed landscaping.
- Other landscape design features listed within subsequent Section D.
- Verification. Landscape plans shall contain the following statement : ***"I _____ certify that this landscaping plan complies with all Monterey County landscaping requirements including, but not limited to, the use of native drought tolerant, non-invasive species, and limited turf"*** which shall be signed by a licensed landscape architect, licensed landscape contractor, or any other person authorized to design a landscape. This verification is required to ensure that the licensed professional who prepared the plans is certifying that the plans comply with the County's requirements.

B. Planting Areas and Palette

1. Planting Areas

Planting areas need to be depicted accurately on the planting plan, to identify the different plant types by a utilizing a plant symbol and labeling system and a key or legend listing each plant used and its corresponding symbol. The applicant should also include information relative to the plants such as: plant species name (both Latin and common), container size (e.g., 1 gallon, 5 gallon, etc.), quantity of each plant type used, and the spacing needed for groundcover planting (e.g., plant at 3 feet on center). The planting plans should also include information on the existing vegetation of the site which should be shown clearly and quantified (in square feet). For example: In order to gain a full understanding of the landscape project, areas where existing vegetation is to remain, areas that require new irrigation or where existing irrigation that will remain in place, and areas where existing vegetation will be removed should be clearly depicted on the plans with a corresponding note or table indicating their amounts in square footage. Trees to be removed must be clearly and accurately represented in conformance with requirements of any tree removal permit that will need to be issued.

Landscape areas that are exempt from the Landscape Ordinance (see section 16.61.030.C of the Water and Energy Efficient Landscape Ordinance and Section 2.D of this manual) should be clearly delineated. Examples of these include areas dedicated permanently and solely to edible plants, areas on the property to remain natural, and any other vegetated areas that do not have a permanent irrigation system. When designing the landscape, the applicant must also keep in mind that plants with similar water use needs are required to be grouped together in distinct hydrozones (see Section 5.C of this manual) and the mix of high and low water use plants is prohibited. In terms of energy efficiency, plant type and location should also be selected to avoid obstructing passive solar energy systems. In addition, planting that must meet fuel management/fire hazard requirements should be clearly noted as such.

2. Planting Palette

Selected plants used in landscape areas should generally be drought tolerant with emphasis on native and/or native compatible species when appropriate. Limiting higher water use plants to special design areas of the landscape, such as entrances, courtyards, and Low Impact Development is recommended. Turf uses a significant amount of water and should only be used for specific functional areas (playing areas, etc.) that require turf. The ordinance limits turf to either 20% of the landscape area or up to 1,500 square feet (whichever is lower) unless the turf area is designated as a Special Landscape Area and is solely dedicated to active play such as parks, sports fields, golf courses, and where natural turf provides a playing surface. However, in typical landscaped areas, avoiding the use of turf altogether or limiting it to an amount much less than the maximum allowed is encouraged. In addition to turf square footage limitation, the Landscape Ordinance prohibits planting turf in areas with slopes that exceed 10%, areas that are eight feet wide or less, and on street medians, traffic islands, planter strips, or bulb-outs. These requirements reflect the concept of only using turf when it is required for a specific function. The use of drought tolerant shrubs and groundcovers instead of turf is strongly encouraged.

The use of invasive plants is strictly prohibited and their eradication as part of the landscape project is highly encouraged. Invasive plants have become a real problem in both ornamental and natural landscapes. Incorporating eradication into new landscape projects will help limit their spread.

Appropriate plant spacing must be carefully considered based upon their specific adaptability of the plant to the climatic, geologic, and topographical conditions of the project site. In addition careful attention must be given to incorporating fuel management requirements into a proposed landscape. If a project requires fuel management due to its location in a fire hazard area the plant selection is critical. Section 9 of this manual includes specific requirements and guidance related to this issue.

C. Grading, Soil Amendments, Conditioning, and Mulching

When conceptualizing the required grading for a landscaping project, the applicant is required to incorporate designs that minimize soil erosion, runoff, and water waste. In order to demonstrate this, grading information should be depicted on the plans and include the height of graded slopes, drainage patterns, pad elevations, and finished elevations. Furthermore, it is recommended that applicants consider grading the site so that all irrigation and normal rainfall remain within the property lines and avoid disruption of natural drainage patterns and undisturbed soil. In addition, the planting plan should clearly denote (either as notes and/or details and specifications, whichever is appropriate) all soil amendments consistent with the recommendations of the soil management report (see Section 7).

D. Other Landscape Design Features

In addition to project site treatment and planting, landscapes typically incorporate the use of other design features for aesthetic and/or multi-functional purposes. These features should also be depicted on the planting plans. For those areas that are not subject to water budget calculations, a note explaining why should also be included. Some examples of other landscape design features are:

- Water features such as fountains, spas, ponds, etc.
- Ornamental landscape features such as windmills, statuary, decoration, monuments, sculpture, public art, flagpoles, etc.
- Stormwater best management practices and Low Impact Development that control runoff and increase on-site retention and infiltration into the landscape design, such as vegetated filter strips, swales, infiltration basins, etc.
- Rain harvesting or catchment technologies such as rain gardens, cisterns, etc.
- Energy efficient landscape techniques (see Section 8).

- Landscape planting located within parking areas or lots.

E. Landscape Maintenance Schedule

The regular maintenance of landscape planting will promote plant health, ensure water use efficiency, and lower costs to the applicant/owner. Pursuant to the requirements of the Landscape Ordinance, a regular maintenance schedule is required as part of the Certificate of Completion (see Section 9). A regular maintenance schedule should, at a minimum, include the following:

- Routine inspection of planting areas and individual plants to remove dead vegetation and adjust fertilization, watering, etc.
- Aerating and dethatching turf areas.
- Replenishing mulch as needed.
- Fertilizing, pruning and weeding in all landscape areas.

SECTION 5 – WATER EFFICIENT LANDSCAPE REQUIREMENTS

The water efficient landscape requirements are a key component to the overall landscape design and strict adherence will result in the incorporation of water management practices and water waste prevention through planting and irrigation design. When designing a site's planting plan, the effective use of hydrozones is critical. Strategic placement and groupings of plants in each area will not only reduce the need for water use, but it will result in minimizing costs for maintenance and upkeep of the landscape.

In order for the County (in compliance with applicable state laws) to determine if a project complies with the Landscape Ordinance, certain calculations will need to be performed by the applicant. First, the maximum water allowance for a site must be established. This is done by setting the Maximum Applied Water Allowance (MAWA) limit for water use. Once that is established, the estimated amount of water to be used for the proposed landscaping is calculated (ETWU), using the water use information included the Hydrozone Table. If the amount of water calculated from the ETWU is lower than the amount of water calculated from the MAWA, it is assumed that the landscape project has reduced its water use to the lowest amount practical.

A. Water Budget Calculations – Water Efficient Landscape Worksheet

In order to document a project's efficient use of water use, the applicant is required to submit a Water Efficient Landscape Worksheet (see Appendix B) to the County as part of the Landscape Package. The worksheet includes the calculation of a project site's MAWA, the proposed planting's water use depicted in a Hydrozone Table, and the project's ETWU.

B. Establishing the MAWA

The calculation of the Maximum Applied Water Allowance (MAWA) is used to determine the upper limit of the annual applied water that can be used to irrigate the landscape area. The MAWA is determined by multiplying the annual evapotranspiration or ETo value (the annual amount of water evaporated from the earth and the water lost through plants) by the total landscape area. ETo values vary between regions and areas due to differences in climate. Therefore, to determine a project site's ETo value, a Referenced Evapotranspiration Table has been included as Appendix C of this manual. The following equation will be used to determine the MAWA and the calculation will be submitted with the landscape package as a worksheet.

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

Where:

MAWA = Maximum Applied Water Allowance (gallons per year)

ETo = Reference Evapotranspiration from Appendix B.2 of this manual (inches per year)

0.7 = ET Adjustment Factor or ETAF (except for special landscape areas, a factor of 0.7, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency)

LA = Square feet of the total landscaped area (including Special Landscape Area)

0.62 = Conversion factor (to gallons per square foot)

SLA = Square feet of the Special Landscape Area (area of the landscape irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where natural turf provides a playing surface)

0.3 = The additional ET Adjustment Factor/water allowance for Special Landscape Area (1.0 – 0.7 = 0.3)

Example 1. *An applicant has a landscape project (2,500 square feet total) in the Central Salinas Valley planning area, located near Arroro Seco. The applicant intends on planting low and moderate use plants and does not wish to include planting that can be considered as a Special Landscape Area (SLA). The MAWA calculation would be performed as follows:*

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

MAWA= (52.6)(0.62)[1,750 + 0]

MAWA= (32.61)(1,750)

MAWA= 57,068 gallons per year

C. Hydrozones – Hydrozone Information Table

The proper establishment of hydrozones in a landscape results in improving water conservation. By grouping vegetation that requires similar water uses in distinct hydrozones, the amount of water needed to irrigate the plants will be used efficiently. In addition, designing hydrozones will also allow applicants to take advantage of microclimates on the specific site; planting vegetation that will tolerate heat and wind can be placed closer to the street while more sensitive plants placed in shaded areas closer to structures where they are more protected. Once the applicant has determined where the distinct hydrozones will be located on their property, they will then need to decide what plants will be appropriate. In order to do this, the applicant will have to determine what the general water use is for each plant selected. Pursuant to the landscape ordinance, the plant water use shall be determined using the Water Use Classification of Landscape Species guide or WUCOLS (see Appendix E, Glossary).

Example 2. *An applicant would like to plant three different types of plants together: Anigozanthos flavidus (kangaroo paw), hypericum olympicum (Olympic hypericum), and leucanthemum X superbum (Shasta Daisy). The applicant would then look up the plants in the Species Evaluation List (1999) found in the WUCOLS to determine water use. Both Kangaroo paw and Olympic hypericum are listed as low water use plans but the Shasta Daisy is listed as a moderate use plant. Therefore, the hydrozone for this planting would be identified as a moderate water use area.*

When designing the landscape and identifying they placement of hydrozones, the applicant should also consider the specific requirements of the Landscape Ordinance, such as:

- The surface area of water features shall be classified as a high water use hydrozone area.
- Low and moderate water use plants can be mixed, but the entire hydrozone shall be classified as moderate water use (as shown in Example 2.).
- High water use plants shall not be mixed with low or moderate water use plants.
- Temporarily irrigated areas shall be classified as a low water use hydrozones.
- Special Landscape Areas using recycled water shall be classified as low water use hydrozone.

Hydrozone Information Table.

Not only does the landscape ordinance require landscapes to be designed utilizing hydrozones, it also requires applicants to take the hydrozone data and place it into a Hydrozone Information Table (see Appendix B) . For each hydrozone listed, the applicant must list the plant type and/or water feature, the irrigation method used, the square footage of the hydrozone, and the percentage of the total landscape area of the project that the hydrozone represents.

Example 3. *The same applicant decides to plant Kangaroo paw and Olympic hypericum in one 1,800 square foot hydrozone and the Shasta Daisy in a different 700 square foot hydrozone. This information would be included in a the Hydrozone Information Table as follows:*

Hydrozone	Zone or Value	Irrigation Method	Areas (sq. ft.)	% of Landscape Area
1	Low	Bubbler	1,800	72%
2	Moderate	Drip	700	28%
			Total	100%

D. Plant Factor Range, Plant Factor and Calculating the Estimated Total Water Use

1. Plant Factor Range

Once the Hydrozone Information Table has been completed, that data will then be used to calculate the project's Estimated Total Water Use (ETWU). However, prior to calculating the ETWU, the applicant must determine the plant factor (the estimated amount of water needed by plants) which is achieved by first identifying the plant factor range established by WUCOLS. The table below represents the Plant Factor Range:

Plant Factor Range Table	
Very Low Water Use	< 0.1
Low Water Use	0.1 to 0.3
Moderate Water Use	0.4 to 0.6
High Water Use	0.7 to 1.0

Example 4. *The applicant has decided to use: Anigozanthos flavidus (kangaroo paw), hypericum olympicum (Olympic hypericum), and leucanthemum X superbum (Shasta Daisy). In order to determine the plant factor, the applicant would then look up the plants in the Species Evaluation List (1999) found in the WUCOLS to determine water use. Both Kangaroo paw and Olympic hypericum are listed as low water use plans but the Shasta Daisy is listed as a moderate use plant. Utilizing the Plant Factor Range table, the low water use plants would fall into the range of 0.1 to 0.3 and the moderate water use plant would fall in the 0.4 to 0.6 range.*

2. Plant Factor

Once the plant factor range(s) has been determined, the applicant can then use that range to determine the plant factor. The typical practice for selecting the plant factor would be to use the mid value of the given range (e.g., the plant factor range for low water use plants is 0.1 to 0.3; therefore, the mid value would be 0.2). In order to assist applicants calculating the total plant factor for the proposed landscaping, especially those that may have a wider range of plants, the County has provided and additional worksheet: the Hydrozone/Plant Factor Calculation worksheet found in Appendix B. The information to be included from this table will come from the data found in the Hydrozone Information Table and the determined plant factor range.

Example 5. *Based on the Hydrozone Information Table in Example 3 and using the mid-value given for each respective hydrozone, the completed the Hydrozone/Plant Factor Calculation worksheet would be as follows:*

Hydrozone	Zone or Value	Plant Factor (PF)	Hydrozone Area (HA) (square feet)	PF x HA (square feet)
1	Low	0.2	1,800	360 sq. ft.
2	Moderate	0.5	700	350 sq. ft.
			Sum	710 sq. ft.
N/A	SLA	N/A	0	0

3. Calculating the Estimated Total Water Use (ETWU)

The calculation of the ETWU is used to determine the total amount of water that is required for the landscape area. The ETWU is determined by multiplying the ETo value (converted into gallons per square foot) by the overall sum of the quotient of the plant factor (PF) multiplied by the hydrozone area (HA) and divided by the irrigation efficiency plus the square footage of the Special Landscape Area (SLA). The following equation shall be used to determine the ETWU and the calculation needs to be included within the landscape package.

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

Where:

ETWU = Estimated Total Water Use per year (gallons)

ETo = Reference Evapotranspiration from Appendix C of this manual (inches)

PF = Plant Factor from WUCOLS or Hydrozone/Plant Factor Calculation worksheet (Appendix B)

HA = Square feet of Hydrozone Area from Hydrozone/Plant Factor Calculation worksheet (Appendix B)

0.62 = Conversion factor (to gallons per square foot)

SLA = Square feet of the portion of the landscape area identified as Special Landscape Area (areas of the landscape irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where natural turf provides a playing surface)

IE = Irrigation Efficiency (minimum 0.71)

Example 6. *Based on the data found in the Hydrozone/Plant Factor Calculation worksheet in Example 5 and the known ETo factor for the project area, calculation of the ETWU can be performed as follows:*

ETWU= (ETo)(0.62) [((PF x LA) / (IE)) + SLA]

ETWU= (52.6)(0.62)[(710/.71) + 0]

ETWU= (32.61)(1,000)

ETWU= 32,610 gallons per year

E. Determining if the Proposed Landscaping Project is Water Efficient

If the calculated ETWU is less than the established MAWA, the project is considered to be water efficient.

Example 7. *Based on the information below, the project is assumed to be water efficient.*

MAWA limit from Example 1 = 57,068 gallons per year

ETWU from Example 6 = 32,610 gallons per year

ETWU is below the WAWA by 24,458 gallons per year

SECTION 6 – IRRIGATION REQUIREMENTS

For the efficient use of water, an automated irrigation system must be designed to meet all the requirements listed in this section and the equipment manufacturer's recommendations. The irrigation system and its related components must be planned and designed to allow for proper installation, management and maintenance. Consistent with the requirements of the Landscape Ordinance, irrigation plans will need to be prepared by a licensed landscape architect, a licensed landscape contractor, a certified irrigation designer, or any other person authorized to design a landscape and will be used in conjunction with approved planting plans, as the final landscape construction plans for the project. The irrigation plan is typically a site plan prepared to depict the locations of the irrigation system equipment. In order to provide applicants with a simplistic format, the information to be included in the irrigation plan has been broken up into four separate content sections: general contents and requirements; system standards; irrigation design standards; and irrigation scheduling and maintenance.

A. General Contents and Requirements of the Irrigation Plan

The irrigation plan, drawn at a clear and legible scale, should include the following information:

- Location and size of water meters for landscape planting.
- Location, type and size of all components of the irrigation system, including controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, pressure regulators and backflow prevention devices.
- Static water pressure at the point of connection to the public water supply.
- Flow rate (gallons per minute), application rate (inches per hour) and design operating pressure (pressure per square inch) for each station.
- Recycled water irrigations systems.

- Verification. Irrigation plans shall contain the following statement: ***"I_____ certify that this irrigation plan complies with all Monterey County landscaping requirements including, but not limited to, the use of low flow and water conserving irrigation fixtures"*** which shall be signed by a licensed landscape architect, licensed landscape contractor, a certified irrigation designer, or any other person authorized to design an irrigation plan.

B. Irrigation System Standards

In order to ensure irrigation systems use water efficiently, the Landscape Ordinance requires applicants to incorporate certain standards within the design of their system. The irrigation system should integrate specific structural components that have been identified to meet these standards. The following is a list of those components:

1. Irrigation Efficiency

- The irrigation system required to be designed to ensure that the dynamic pressure at each emission device is within the manufacturer's recommendation pressure range for optimal performance. For the purpose of determining ETWU, average irrigation efficiency is assumed to be 0.71. Therefore, irrigation systems shall be designed, maintained, and managed to meet or exceed an average landscape irrigation efficiency of 0.71.
- Pressure regulation and/or booster pumps shall be installed so that all components of the irrigation system operate at the manufacturer's recommended optimal pressure.
- Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) shall be required, as close as possible to the point of connection of the water supply, to minimize water loss in case of emergency (such as a main line break) or routine repair.
- Isolation valves shall be installed at the point of connection and before each valve or valve manifold.
- Backflow prevention devices shall be provided to protect the water supply from contamination by the irrigation system.

- Point source irrigation is required where plant height at maturity will affect the uniformity of an overhead irrigation system.

2. Irrigation Sensors

- In order to prevent irrigation from during wet weather, weather-based self-adjusting irrigation controllers with rain sensors shall be required for both residential and non-residential irrigation systems.
- High flow sensors that detect and report high flow conditions created by system damage or malfunction are recommended.
- Irrigation systems with meters one and one-half (1.5) inches or greater shall have a high-flow sensor that can detect high flow conditions and have the capability to shut off the irrigation system automatically.

C. Irrigation Design Standards

The actual design of an irrigation system (placement and location of irrigation system components) is just as essential as the irrigation itself when trying to achieve maximum water efficiency. Therefore, the Landscape Ordinance requires applicants to incorporate the following standards when designing irrigation systems:

1. Preventing Water Waste

- All irrigation systems shall be designed to prevent runoff, low head drainage, overspray, or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent properties, hardscapes, roadways, or structures.
- Relevant information from the soil management plan, such as soil type and infiltration rate, shall be utilized when designing irrigation systems. This will allow water to be distributed efficiently and prevent overflow in areas with poor water infiltration.

- Low volume irrigation, such as drip irrigation and the use of bubblers, shall be used in mulched planting areas to maximize water infiltration into the root zone.
- Sprinkler heads, rotors, and other emission devices on one valve shall have matched precipitation rates, unless otherwise directed by the manufacturer's recommendations
- Sprinkler spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer's recommendations.
- Narrow or irregularly shaped landscape areas, including turf less than eight (8) feet in width in any direction, shall be irrigated with subsurface irrigation or low volume irrigation technology in order to prevent water waste due to overspraying of the area.
- Overhead irrigation shall require a twenty-four (24) inch setback from any non-permeable surface that does not drain toward the landscape area.
- Slopes greater than f15% shall be irrigated with point source or other low-volume irrigation technology.
- Swing joints or other riser protection components, which allow flexibility between sprinkler heads and the irrigation system, shall be required on all risers. This will prevent large amounts of water waste by preventing the connections from breaking.
- Check valves shall be installed to prevent low-head drainage.
- Slopes greater than 25% shall not be irrigated with an irrigation system with a precipitation rate exceeding 0.75 inches per hour.

2. Use of Recycled Water

- Irrigation systems shall be designed and constructed to allow the use of recycled water where such recycled water is available or may become available in the future. Landscaping using recycled water shall be considered a Special Landscape Area.
- Use of alternative landscape features that increase the capture and use of rainwater to irrigate (i.e. rain gardens, cisterns) or create opportunities for infiltration and/or onsite storage are recommended and encouraged.

3. Hydrozones

- The design of the irrigation system shall conform to the hydrozones delineated on the approved planting plans. Separate valves shall be used to irrigate hydrozones with high water use plants and moderate or low water use plants
- Each valve shall irrigate a hydrozone with similar site, slope, sun exposure, soil conditions and plant materials with similar water use
- Sprinkler heads and other emission devices shall be selected based on its appropriateness for the plant type within that hydrozone. Where feasible, trees shall be placed on separate valves from shrubs, groundcovers, and turf

D. Irrigation Scheduling and Maintenance

The regular scheduling and maintenance of an irrigation system will result in efficient water use. All irrigation schedules shall be developed, managed and evaluated to utilize the minimum amount of water required to maintain plant health. To ensure functioning equipment, the irrigation system must be also be properly maintained. A regular maintenance schedule shall include routine inspection and the adjustment and repair of the irrigation system and its component . The irrigation schedule shall factor irrigation run times, emission device, flow rate, and current reference evapotranspiration, so that applied water meets the Estimated Total Water Use. Consistent with the requirements of the Landscape Ordinance, a regular maintenance schedule shall be submitted with the landscape Certificate of Completion, and when applicable, it shall incorporate the following:

- Irrigation interval (days between irrigation).
- Irrigation run times (hours or minutes per irrigation event to avoid runoff).
- Number of cycle starts required for each irrigation event to avoid runoff.
- Amount of applied water scheduled to be applied on a monthly basis.
- Application rate setting.
- Root depth setting.

- Plant type setting.
- Slope factor setting shade factor setting.
- Irrigation uniformity or efficiency setting.

SECTION 7 – SOILS MANAGEMENT REPORT REQUIREMENTS

In order to promote healthy plant growth and prevent excessive erosion and runoff, the Landscape Ordinance requires that a soil management report be completed by either the project applicant or his/her designee. The purpose of the report is to obtain an analysis of the existing soil conditions from a lab qualified to evaluate soils relative to horticulture (verses agriculture or structural integrity), resulting in recommendations of appropriate soil amendments for which then the applicant incorporates into the planting and irrigation plans.

Submittal of the report will be required as part of the landscape package, and the landscape architect or landscape contractor who prepared the planting and irrigation plans is required to verify that the report recommendations were used in conjunction with the preparation of those plans. Furthermore, as part of the Certificate of Completion, the applicant is required to submit documentation that the installation of landscaping was done in accordance with the report. Based on the requirements of the landscape ordinance, the report should contain a laboratory analysis of soil samples that includes the following:

- Soil texture;
- Infiltration rates determined by laboratory test or soil texture infiltration rate table;
- Soil pH;
- Total soluble salts;
- Sodium;
- Percent of organic matter; and
- Recommendations for appropriate soil amendments.

SECTION 8 – ENERGY EFFICIENCY

Improving energy efficiency adds to the sustainability of all residents in the County of Monterey by reducing air pollutants and reducing greenhouse gas emissions from fossil fuels. In addition, energy efficiency also provides many benefits to the project applicant. For instance, by reducing the need for energy resources, applicants will benefit economically through lowering the expense on energy bills.

In order to promote energy efficiency in developments, the County has incorporated energy efficiency regulations within Chapter 18.12 of the Monterey County Code (Green Building Standards Code) and the Landscape Ordinance. For example, when calculating an overall building's energy efficiency budget, project applicants are required to include the energy use and conservation measures incorporated within the landscape component of building project.

The Landscape Ordinance also makes provisions for landscape lighting, requiring that it is designed for energy efficiency and utilizes one or both of the following:

- ENERGY STAR qualified hard-wired fixtures. All hard-wired lighting shall employ programmable photocontrol or astronomical time-switch controls that automatically switch off when daylight is available.
- Solar powered lighting systems.

However, due to health and safety regulations, energy light efficiency requirements are **not** applicable to:

- Exterior lighting for permanent buildings, structures, security, and signs.
- Lighting required by a health of life safety statute ordinance or regulation, including but not limited to emergency lighting.
- Lighting used in or around swimming pools, water features or other locations subject to Article 680 of Title 24, Part 3, *California Electrical Code*.

To further promote energy efficiency, the Landscape Ordinance also encourages the incorporation of additional energy efficiency measures into the landscape design. These measures/ techniques include the following:

- Use strategic shading techniques, plant selection, location and deciduous tree species in the landscape as appropriate to reduce solar heat gain in the summer and maximize passive solar warming in winter months. For example, planting of deciduous trees in front of a large window would provide shade during warmer months when the leaves are full and allow infiltration of sunlight and warmth during the autumn and winter months when the leaves fall.
- Reduce local heat island effects through planting of shade trees or installation of high-albedo (highly reflective) hardscapes.
- Select and place landscaping to provide wind protection or windbreaks.
- Use solar power and/or other renewable energy (such as wind) in the landscape design.
- Use salvaged, refurbished, renewable, local and recycled landscape and planting materials to reduce the energy requirements of new manufacture and transport.

SECTION 9 – FUEL MANAGEMENT

The benefits of a well designed landscape do not only include the creation of areas that are both pleasing to the senses and water and energy efficient, but it can also result in the protection of structures and the immediate surrounding areas from wildfires if it includes fire safe landscaping.

The Landscape Ordinance requires that all landscape projects be consistent with any fire safe landscaping requirements imposed by a property's designated Fire District. It addition, it is encouraged that applicants consider the recommended fire safe methods in designing their landscape. These recommendations include:

- Establishing a Greenbelt – A greenbelt is an area of irrigated landscaping which includes fire resistant planting. Establishment of a greenbelt will result in creating a buffer zone between structures and any surrounding vegetation, which slows or prevents the advancement of ground fires.
- Eliminate "fire-ladders" – An arrangement of plants that provide fuel for a fire to climb from ground covers or grasses to shrubs and up into tree tops or structures.
- Maintenance of vegetation – Maintenance of the landscape area can reduce the fire load by removing dead branches from shrubs and trees, clearing leaf litter from the ground, and pruning lower branches to increase clearance above the ground.
- Plant selection – Incorporating fire resistant vegetation and plants with deep roots within the landscape will add in fire protection and erosion control if a fire does occur. For additional information, a Fire Resistant Plant List is included in Appendix E of this manual.

SECTION 10 – LANDSCAPE CERTIFICATION COMPLETION

Prior to occupancy or final of a grading or building permit, a signed landscape Certificate of Completion shall be submitted to the RMA-Planning Department (see Appendix D) with information and documentation that the landscape planting and irrigation has been installed in accordance with the approved plans and soils management report. If significant changes were required during installation of the landscape and irrigation system, the applicant will be required to submit "as-built" plans along with the landscape certificate of completion. In addition, the landscape architect or landscape contractor must verify that the as-built landscape plans are in accordance with the planting, irrigation, water efficiency, and energy efficiency requirements of the landscape ordinance.

The Certificate of Completion includes six parts which contains the following information:

- Project information.
- A signed statement verifying that the landscape install is consistent with the approved plans.
- An irrigation audit demonstrating that an inspection, system tune-up, system test with distribution uniformity, reporting overspray or run off that causes overland flow, and preparation of an irrigation schedule has occurred.
- An irrigation schedule that includes the parameter setting and schedule for controllers.
- A schedule of landscape and irrigation maintenance.
- Documentation verifying recommendations from the soils analysis were implemented in the landscape installation.

APPENDIX A

LANDSCAPE PACKAGE APPLICATION AND SUBMITTAL FORM

MONTEREY COUNTY
RESOURCE MANAGEMENT AGENCY
LANDSCAPE PACKAGE APPLICATION AND SUBMITTAL FORM

RMA – PLANNING
MIKE NOVO, DIRECTOR
168 W. Alisal St. 2nd Flr.
Salinas, CA 93901
(831) 755-5025
www.co.monterey.ca.us/rma

Landscape applications shall be submitted to the RMA-Planning for review and approval. The following is a checklist of materials required for submittal of your landscape package. Please feel free to contact your assigned project planner at any point in the development process regarding questions you may have about your application. Two (2) hardcopies of all materials are required. Plans shall be drawn on a sheet sized large enough to have legible fonts and lineweights. An electronic copy (pdf.) of all submitted materials is also required to be submitted on CD or flash-drive.

PROJECT INFORMATION		PERMIT NO.	
SITE ADDRESS	CITY/STATE		ZIP
NEAREST CROSS-STREET	ASSESSOR'S PARCEL NUMBER(S)		

OWNER(S) INFORMATION		
NAME		PHONE
MAILING ADDRESS	CITY/STATE	ZIP
FAX	EMAIL	

APPLICANT INFORMATION		
NAME		PHONE
MAILING ADDRESS	CITY/STATE	ZIP
FAX	EMAIL	

Submit the following information and materials in accordance with the requirement of the Water and Energy Efficient Landscape Ordinance and the Landscape Manual:			
☐	**Planting Plan**	☐	**Water Budget Calculations**
☐	**Irrigation Plan**	☐	**A Plumbing/Irrigation Permit has been applied for.**
☐	**Soils Management Report**	☐	**The landscape review fee has been paid.**

Owner/Applicant Signature: _____ Date: _____

FOR DEPARTMENT USE ONLY		
RECEIVED BY:	DATE STAMP:	ALL THE REQUIRED MATERIAL WERE SUBMITTED: __ YES __ NO

APPENDIX B

WATER EFFICIENT LANDSCAPE WORKSHEET

RMA – PLANNING
MIKE NOVO, DIRECTOR
168 W. Alisal St. 2nd Flr.
Salinas, CA 93901
(831) 755-5025
www.co.monterey.ca.us/rma

MONTEREY COUNTY
RESOURCE MANAGEMENT AGENCY
WATER EFFICENT LANDSCAPE WORKSHEET

The water efficient landscape worksheet shall be filled out by the project applicant and submitted with the Landscape Package Application to the RMA-Planning Department for review and approval.

SECTION 1. HYDROZONE INFORMATION TABLE

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

Hydrozone*	Zone or Value	Irrigation Method**	Areas (sq. ft.)	% of Landscape Area
			Total	

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

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

SECTION 2. MAXIMUM APPLIED WATER ALLOWANCE (MAWA)

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

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

Where:

MAWA = Maximum Applied Water Allowance (gallons per year)

ETo = Reference Evapotranspiration from Appendix C (inches per year)

0.7 = ET Adjustment Factor (ETAF)

LA = Landscaped Area includes Special Landscape Area (square feet)

0.62 = Conversion factor (to gallons per square foot)

SLA = Portion of the landscape area identified as Special Landscape Area (square feet)

0.3 = Additional ET Adjustment Factor for Special Landscape Area (1.0 – 0.7 = 0.3)

Maximum Applied Water Allowance = _____ gallons per year

Show calculations:

SECTION C. HYDROZONE/PLANT FACTOR CALCULATION WORKSHEET

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

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

SECTION D. ESTIMATED TOTAL WATER USE (ETWU)

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

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

Where:

ETWU = Estimated Total Water Use per year (gallons)

ETo = Reference Evapotranspiration from Appendix C (inches)

PF = Plant Factor from WUCOLS

HA = Hydrozone Area [high, medium, and low water use areas] (square feet)

0.62 = Conversion factor (to gallons per square foot)

SLA = Portion of the landscape area identified as Special Landscape Area (square feet)

IE = Irrigation Efficiency (minimum 0.71)

Estimated Total Water Use = _____ gallons

Show calculations:

APPENDIX C

REFERENCE EVAPOTRANSPIRATION (ETo) TABLE

REFERENCE EVAPOTRANSPIRATION (ETo) TABLE

For calculation of the MAWA and ETWU, the project applicant shall use the following annual evapotranspiration (ETo) values

Nearest City/Town	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual ETo
Arroyo Seco	1.5	2.0	3.7	5.4	6.3	7.3	7.2	6.7	5.0	3.9	2.0	1.6	52.6
Castroville	1.4	1.7	3.0	4.2	4.6	4.8	4.0	3.8	3.0	2.6	1.6	1.4	36.2
Gonzales	1.3	1.7	3.4	4.7	5.4	6.3	6.3	5.9	4.4	3.4	1.9	1.3	45.7
Greenfield	1.8	2.2	3.4	4.8	5.6	6.3	6.5	6.2	4.8	3.7	2.4	1.8	49.5
King City	1.7	2.0	3.4	4.4	4.4	5.6	6.1	6.7	6.5	5.2	2.2	1.3	49.6
King City-Oasis Rd.	1.4	1.9	3.6	5.3	6.5	7.3	7.4	6.8	5.1	4.0	2.0	1.5	52.7
Long Valley	1.5	1.9	3.2	4.1	5.8	6.5	7.3	6.7	5.3	3.6	2.0	1.2	49.1
Monterey	1.7	1.8	2.7	3.5	4.0	4.1	4.3	4.2	3.5	2.8	1.9	1.5	36.0
Pajaro	1.8	2.2	3.7	4.8	5.3	5.7	5.6	5.3	4.3	3.4	2.4	1.8	46.1
Salinas	1.6	1.9	2.7	3.8	4.8	4.7	5.0	4.5	4.0	2.9	1.9	1.3	39.1
Salinas North	1.2	1.5	2.9	4.1	4.6	5.2	4.5	4.3	3.2	2.8	1.5	1.2	36.9
San Ardo	1.0	1.7	3.1	4.5	5.9	7.2	8.1	7.1	5.1	3.1	1.5	1.0	49.0
San Juan	1.8	2.1	3.4	4.6	5.3	5.7	5.5	4.9	3.8	3.2	2.2	1.9	44.2
Soledad	1.7	2.0	3.4	4.4	5.5	5.4	6.5	6.2	5.2	3.7	2.2	1.5	47.7

Sources: * The values in this table were derived from:

1) California Irrigation Management Information System (CIMIS);

2) Reference EvapoTranspiration Zones Map, UC Dept. of Land, Air & Water Resources and California Dept of Water Resources 1999; and

3) Reference Evapotranspiration for California, University of California, Department of Agriculture and Natural Resources (1987) Bulletin 1922,

4) Determining Daily Reference Evapotranspiration, Cooperative Extension UC Division of Agriculture and Natural Resources (1987), Publication Leaflet 21426

APPENDIX D

CERTIFICATE OF COMPLETION

MONTEREY COUNTY
RESOURCE MANAGEMENT AGENCY
CERTIFICATE OF COMPLETION

RMA – PLANNING
MIKE NOVO, DIRECTOR
168 W. Alisal St. 2nd Flr.
Salinas, CA 93901
(831) 755-5025
www.co.monterey.ca.us/rma

Prior to the final of grading or building permits, the applicant shall submit a Certificate of Completion to the RMA-Planning for review and approval.

PART 1. PROJECT INFORMATION

SITE INFORMATION		PERMIT NO.	
SITE ADDRESS	CITY/STATE		ZIP
NEAREST CROSS-STREET	ASSESSOR'S PARCEL NUMBER(S)		

OWNER(S) INFORMATION			
NAME		PHONE	
MAILING ADDRESS	CITY/STATE		ZIP
FAX	EMAIL		

APPLICANT INFORMATION			
NAME		PHONE	
MAILING ADDRESS	CITY/STATE		ZIP
FAX	EMAIL		

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

Owner Signature: _____ Date: _____

PART 2. CERTIFICATION OF INSTALLATION ACCORDING TO THE LANDSCAPE PACKAGE

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

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

*Signer of the planting plan, signer of the irrigation plan, or the licensed contractor who installed the landscaping.

PART 3. IRRIGATION AUDIT

An irrigation audit demonstrating that an inspection, system tune-up, system test with distribution uniformity, reporting overspray or run off that causes overland flow, and preparation of an irrigation schedule has occurred.

PART 4. IRRIGATION SCHEDULING

Attach parameters for setting the irrigation schedule on controller per Section No. 16.61.130 of the Water and Energy Efficient Landscape Ordinance.

PART 5. SCHEDULE OF LANDSCAPE AND IRRIGATION MAINTENANCE

Attached schedule of Landscape and Irrigation Maintenance per Section No. 16.61.130 of the Water and Energy Efficient Landscape Ordinance.

PART 6. SOIL MANAGEMENT REPORT

Attach documentation verifying implementation of recommendation from soils analysis report per Section No. 16.61.130 of the Water and Energy Efficient Landscape Ordinance.

APPENDIX E

PLANT LISTS

Monterey County Invasive Weeds	
Common Name	Scientifi Name
Fertile Capeweed	Arctotheca calendula
French Broom	Genista monspessulana
Cape Ivy	Delairia odorata
Arundo	Arundo donax
Pampas Grass	Cortaderia selloana
Purple Pampas Grass	Cortaderia jubata
Yellowstar-thistle	Centaurea solstitialis
Veldt Grass	Ehrharta calycina
Taurian Thistle	Onopordum tauricum
Puna Grass	Achnatherum brachychaetum
Skeletonweed	Chondrilla juncea
Scotch Thistle	Onopordum acanthium
Sticky Eupatorium	Ageratina adenophora

LATIN	COMMON	ZONE
Agapanthus orientalis	blue Lily of the Nile	1
Agapanthus	'Peter Pan' Dwarf Lily of the Nile	1
Armeria alliacea	Sea Pink	1
Armeria maritima	Sea Pink	1
Armeria pseudaemeria (formosana)	Sea Pink	1
Dietes	'Lemon Drop' Fortnight Lily	1/2
Dietes bicolor	Yellow Wild Iris	1/2
Dietes vegeta	White Fortnight Lily	1/2
Erigeron	'Moerheimii' Fleabane	1
Feijoa sellowiana	Pineapple Guava	1
Festuca rubra	'Creeping Red' Red Fescue	1
Hemerocallis	(assorted) Day Lily	1
Jasminum parkeri	Dwarf Jasmine	1
Kniphofia uvaria	Red Hot Poker	1
Nerine masonorum	Nerine	1
Pun ica granatum	'Nana' Dwarf Pomegranate	1
Pyracantha	'Santa Cruz' Pyracantha	1
Quercus agrifolia	Coast Live Oak	All
Trachelospermum jasminoides	Star Jasmine	1
Aeonium arboretum	'Atropurpureum' Aeonium	2
Aeonium undulatum	Saucer Plant	2
Agave Americana	'Alba Picta' Century Plant	2
Agave attenuate	'Nova' Blue Agave	2
Aloe arborescens	Tree Aloe	2
Aloe 'Johnson's Hybrid'	No common name	2
Aloe nobilis	Aloe	2
Aloe striata	Coral Aloe	2
Aloe vera	Medicinal Aloe	2
Aloe x	Spinosissima Spider Aloe	2
Arbutus unealo	Strawberry Tree	2
Bulbine caulesceni	Bulbine	2
Bulbine	'Hallmark' Bulbine	2
Carissa macrocarpa	'Tuttle' Natal Plum	2
Cercis occidentalis	Western Redbud	2
Coprosma kirkii	'Verde Vista' Prostrate Mirror Plant	2
Cotyledon barbenyii	No common name	2
Cotyledon macrantha	No common name	2
Cotyledon orbiculata	No common name	2
Crassula arborescens	Silver Jade Plant	2
Crassula argentea	'Pink Beauty' Pink Jade Plant	2
Crassula lactea	'Taylor's Patch' Crassula	2
Crassula multicava	Crassula	2
Drosanthemum floribundum rosea	Rosea Ice plant	2
Drosanthemum hispidum	Ice plant	2
Duchesnea indica	Mock Strawberry	2

LATIN	COMMON	ZONE
Dymondia margaretae	No common name	2
Echeveria	'Blue Wave' Echeveria	2
Echeveria	'Pinkie' Echeveria	2
Fragaria chiloensis	Wild Strawberry	2
Hesperaloe parviflora	Red Yucca	2
Kalanchoe pumila	Kalanchoc	2
Myoporum parvifolium	'Prostrate' Myoporum	2
Nerium oleander	'Mrs. Roeding' Dwarf Pink Oleander	2
Nerium oleander	'Petite Salmon' Dwarf Salmon Oleander	2
Pelargonium peltatum	Ivy Geranium	2
Phormium tenax	'Maori Maiden' New Zealand Flax	2
Phormium tenax	'Maori Queen' New Zealand Flax	2
Phormium tenax	'Maori Sunset' New Zealand Flax	2
Pittosporum crossifolium	'compacta' Dwarf Karo	2
Pittosporum tobira	'Wheeler's Dwarf' Mock Orange	2
Ribes viburnifolium	Evergreen Currant	2
Scaevola	'Mauve Clusters' Fan Flower	2
Schinus molle	California Pepper	2
Sedum brevifolium	Stonecrop	2
Sedum rosea	Rose Root	2
Sedum spathulifolium	'Purpureum' Stonecrop	2
Senecio cineraria	Dusty Miller	2
Senecio kleinia	'Mandraliscae' No common name	2
Thevetia peruviana	Yellow Oleander	2
Tulbaghia violacea	'Silver Lace' Society Garlic	2
Yucca whipplei	Yucca	2/3
Achillea millefolium	Yarrow	3
Achillea taygetea	'Moonshine' Yarrow	3
Achillea tomentosa	Woolly Yarrow	3
Achillea millefolium	'Red Beauty' Red Yarrow	3
Achillea millefolium	'Cerise Queen' Pink Yarrow	3
Arctostaphylos edmundsii	'Carmel Sur' Manzanita	3
Arctostaphylos	'Emerald Carpet' Manzanita	3
Arctostaphylos	'Woods Red' Manzanita	3
Artemisia	'Canyon Gray' Silver Wormwood	3
Artemisia pycnocephala	No common name	3
Baccharis pilularis	'Twin Peaks' Dwarf Coyote Brush	3
Centaurea gymnocarpa	Dusty Miller	3
Centranthus ruber	Red Valerian	3
Cheiranthus sp.	Wallflower	3
Cistus 'Sunset'	Rockrose	3
Cistus hybridus	White Rockrose	3
Cistus ladanifer	Crimson Spot Rockrose	3
Cistus salviifolius	Sageleaf Rockrose	3

LATIN	COMMON	ZONE
Cistus purpureus	Orchid Rockrose	3
Coreopsis lanceolata	'Sun Ray' Coreopsis	3
Mimulus puniceus	Red Monkey Flower	3
Mimulus longiflorus	Monkey Flower	3
Elymus condensatus	'Canyon Prince' No common name	3
Eriogonum crocatum	Coastal Wild Gum	3
Eriogonum grandi rubesens	Island Buckwheat	3
Eriophyllum nevinii	Dusty Miller	3
Eschscholzia californica	California Poppy	3
Galveria speciosa	Island Bush Snapdragon	3
Gaura lindheimerii	Gaura	3
Geranium incanum	Stork's Bill Geranium	3
Geranium sanguineum	Geranium	3
Plecostachys serpyllifolia	Curry Plant	3
Helictotrichon sempervirens	Blue Oat Grass	3
Iris	'Pacific Coast Hybrids' California Iris	3
Koeleria glauca	Blue Hair Grass	3
Lantana montevidensis (sellowiana)	Lantana	3
Lavandula dentata	French Lavender	3
Lavandula stoechas	Spanish Lavender	3
Limonium perezii	Statice	3
Linaria maroccana	Toad-Flax	3
Oenothera berlandieri	Mexican evening Primrose	3
Penstemon'Midnight'	Beard Tongue	3
Penstemon heterophyllus	Penstemon	3
Penstemon	'Firebird' Red Penstemon	3
Penstemon	'Skylark' Penstemon	3
Perovskia atriplicifolia	Russian Sage	3
Rhagodia spinescens deltophylla	Rhagodia	3
Rosmarinus officinalis	'Prostrata' Rosemary	3
Salvia aurea	Sage	3
Salvia chamaedryoides	Sage	3
Salvia	'Allen Chickering' Sage	3
Salvia leucantha	Mexican Bush Sage	3
Salvia leucophylla	Purple Sage	3
Salvia	'Dara's Choice' Sage	3
Santolina chamaecyparissus	Grey Lavender Cotton	3
Santolina virens	Green Lavender Cotton	3
Senecio	'Vira-Vira' Dusty Miller	3
Silene maritima	No common name	3
Silene californica	California Indian Pink	3
Sisyrinchium bellum	Blue-eyed Grass	3
Sisyrinchium californicum	Yellow-Eyed Grass	3
Stacys byzantine	Lamb's Ears	3
Trichostema lanatum	Woody Blue Curls	3

LATIN	COMMON	ZONE
Alnus rhombifolia	White Alder	4
Arctostaphylos	'Dr. Hurd' Manzanita	4
Arctostaphylos	'Sunset' Manzanita	4
Cercocarpus betuloides	Mtn. Mahogany	4
Ceanothus gloriosus	'Anchor Bay' Mountain Lilac	4
Ceanothus	'Frosty Blue' Mountain Lilac	4
Ceanothus	'Joyce Coulter' Mountain Lilac	4
Ceanothus	'Ray Hartman Mountain Lilac	4
Ceanothus	'Snow Flurry Mountain Lilac	4
Ceanothus	'wheeler Canyon' Mountain Lilac	4
Ceanothus	'Yankee Point' Mountain Lilac	4
Ceanothus	'Point Reycs' Mountain Lilac	4
Ceanothus griseus horizontalis	Mountain Lilac	4
Garrya elliptica	'Evie' Coast Silktassel	4
Heterome1es arbutifolia	Toyon	4
Heuchera maxima	Coral Bells	3/4
Prunus lyonii	Catalina Cherry	4
Rhamnus californica	'Eve Case' Coffee Berry	4
Rhamnus crocea	Redberry	4
Romneya coulteri	Matilija Poppy	4

APPENDIX F

GLOSSARY

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

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

"California Invasive Plant Inventory" means the California Invasive Plant Inventory maintained by the California Invasive Plant Council.

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

"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.

"Check valve" or "anti-drain valve" means a valve located under a sprinkler head or other location in the irrigation system, to hold water in the system to prevent drainage from sprinkler heads when the sprinkler is off.

"Controller" means an automatic timing device used to remotely control valves or heads to operate an irrigation system. A weather-based controller is a controller that utilizes evapotranspiration or weather data to make adjustments to irrigation schedules. A self-adjusting irrigation controller is a controller that uses on-site sensor data (e.g., soil moisture) to adjust irrigation schedules.

"Developer Installed" means landscaping provided by a developer in conjunction with property improvements such as, but not limited to, remodels/additions, new construction, and land divisions. For the purposes of the landscape ordiance, a developer is a private entity undertaking real estate or property development resulting in the sale or lease of a residential product.

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

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

"Energy efficient landscape" means any new or rehabilitated landscape, public or private, that helps a project achieve a minimum 15% reduction in energy use when compared to the State's mandatory energy efficiency standards.

"Energy efficient lighting system" means any outdoor landscape lighting system consisting of at least 90 percent ENERGY STAR qualified hard-wired fixtures, solar powered lighting, and/or

systems that employ programmable photocontrol or astronomical time-switch controls that automatically switch off when daylight is available.

"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" (ETWU) means the total water used for the landscape.

"ET adjustment factor" means, except for special landscape areas, a factor of 0.7, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency. A combined plant mix with a site-wide average of 0.5 is the basis of the plant factor portion of this calculation. For the purposes of the ETAF, the average irrigation efficiency is 0.71. Therefore, the ET Adjustment Factor is (0.7) = (0.5/0.71).

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

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

"Hardscapes" means any durable material (pervious or impervious).

"High water use plant" mean any plant categorized as high water need by the water use classification of landscape species guide.

"Homeowner-installed" means any landscaping either installed by a private individual for a single family residence or installed by a licensed contractor hired by a homeowner. A homeowner, for purposes of the landscape ordinance, is a person who occupies the dwelling he or she owns. This excludes speculative homes, which are not owner-occupied dwellings.

"Hydrozone" means a portion of the landscaped area having plants with similar water needs *that are served by a valve or set of valves with the same schedule*. A hydrozone may be irrigated or non-irrigated.

"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).

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

"Irrigation audit" means an in-depth evaluation of the performance of an irrigation system conducted by a Certified Landscape Irrigation Auditor. An irrigation audit shall include, 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" (IE) means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum average irrigation efficiency for purposes of this ordinance is 0.71. Greater irrigation efficiency can be expected from well designed and maintained systems.

"Irrigation meter" means a separate meter that measures the amount of water used for items such as lawns, washing exterior surfaces, washing vehicles, or filling pools.

"Landscape architect" means a person who holds a license to practice landscape architecture in the state of California Business and Professions Code, Section 5615.

"Landscape area" or "landscape project" means the total dedicated landscape area on a property. Water features are included in the calculation of the landscape area. Areas dedicated to agricultural cultivation are not included. 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 contractor" means a person licensed by the state of California to construct, maintain, repair, install, or subcontract the development of landscape systems.

"Landscape Manual" means the manual prepared to assist applicants with the implementation of the requirements of the Water and Energy Efficient Landscape Ordinance (see Section 16.61.040.)

"Landscape package (application)" means the landscape materials required to be submitted for review and approval by the Director of the RMA-Planning Department. The landscape package shall include: project information, planting plan, irrigation plan, soils management report, and the water efficient landscape worksheet.

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

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

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

Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

"Low water use plant" means any plant categorized as low water need by the water use classification of landscape species (WUCOLS) guide.

"Main line" means the pressurized pipeline that delivers water for the water sources to the valve or outlet.

"Maximum Applied Water Allowance" (MAWA) means the upper limit of annual applied water for the established landscaped area. It is based upon the area's reference evapotranspiration, the ET Adjustment Factor, and the size of the landscape area.

"Microclimate" means the climate of a small, specific area that may contrast with the climate of the overall landscape area due to factors such as wind, sun exposure, plant density, or proximity to reflective surfaces.

"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.

"Moderate water use plant" means any plant categorized as moderate water need by the water use classification of landscape species (WUCOLS) guide.

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

"New construction" means, for the purposes of the Water and Energy Efficient Landscape ordinance, a new public or private building with a landscape or other new landscape, such as a park, playground, or greenbelt without an associated building.

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

"Overhead irrigation systems" means systems that deliver water through the air (e.g., pop-ups, impulse sprinklers, spray heads, rotors, micro-sprays, etc).

"Overspray" means the irrigation water that is delivered beyond the landscape area, wetting pavements, walks, structures, or other non-landscaped areas.

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

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

"Plant Factor" or "plant water use factor" is a value when multiplied by ETo, estimates the total amount of water needed by plants. For purposes of the Water and Energy Efficient Landscape ordinance, the plant factor range for very low water use plants is less than 0.1, the plant factor for low water use plants is 0.1 to 0.3, the plant factor range for high water use plants is 0.7 to 1.0. Plant factors cited in this ordinance are derived from the Department of Water Resources 2000 publication "Water Use Classification of Landscape Species."

"Planting Plan" means plans consistent with the requirements outlined in Section 16.61.060 of the Landscape Ordinance.

"Rain sensor" or "rain sensing shutoff device" means a component which automatically suspends an irrigation event when it rains.

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

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

"Reference evapotranspiration" or "ETo" means a standard measurement of environmental parameters which affect the water use of plants. ETo is expressed in inches per day, month, or year, 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" means any re-landscaping project that requires a permit, plan check, or design review, and the modified landscape area is equal to or greater than 2,500 square feet, is 50% of the total landscape area.

"Run off' 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.

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

"Soil texture" means the classification of soil based on its percentage of sand, silt, and clay.

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

"Sprinkler head" means a device which delivers water through a nozzle.

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

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

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

"Water conserving plant species" means a plant species identified as having a low plant factor.

"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.

"Water use classification of landscape species guide" (WUCOLS) means the water use classification of landscape species guide published by the University of California Cooperative Extension, the department of water resources, and the bureau of reclamation, as it currently exists or may be amended in the future.

"Watering window" means the time of day irrigation is allowed.

"Weather-based self-adjusting irrigation controller" means a system component that uses local weather and landscape conditions to automatically adjust irrigation schedules to actual conditions on the site or historical weather data.

"Xeriscape" means a landscaping method developed especially for arid and semiarid climates that utilizes water-conserving techniques (such as the use of drought-tolerant plants, mulch, and efficient irrigation) to balance hydrology at the parcel level.