

CITY OF MORGAN HILL
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August 18, 2010

Mr. Simon Eching
California Department of Water Resource
Water Use and Efficiency Branch
Post Office Box 942836
Sacramento, California 94236-0001

Subject: Notification of the City of Morgan Hill's Adoption of a Local Water Efficient Landscape Ordinance

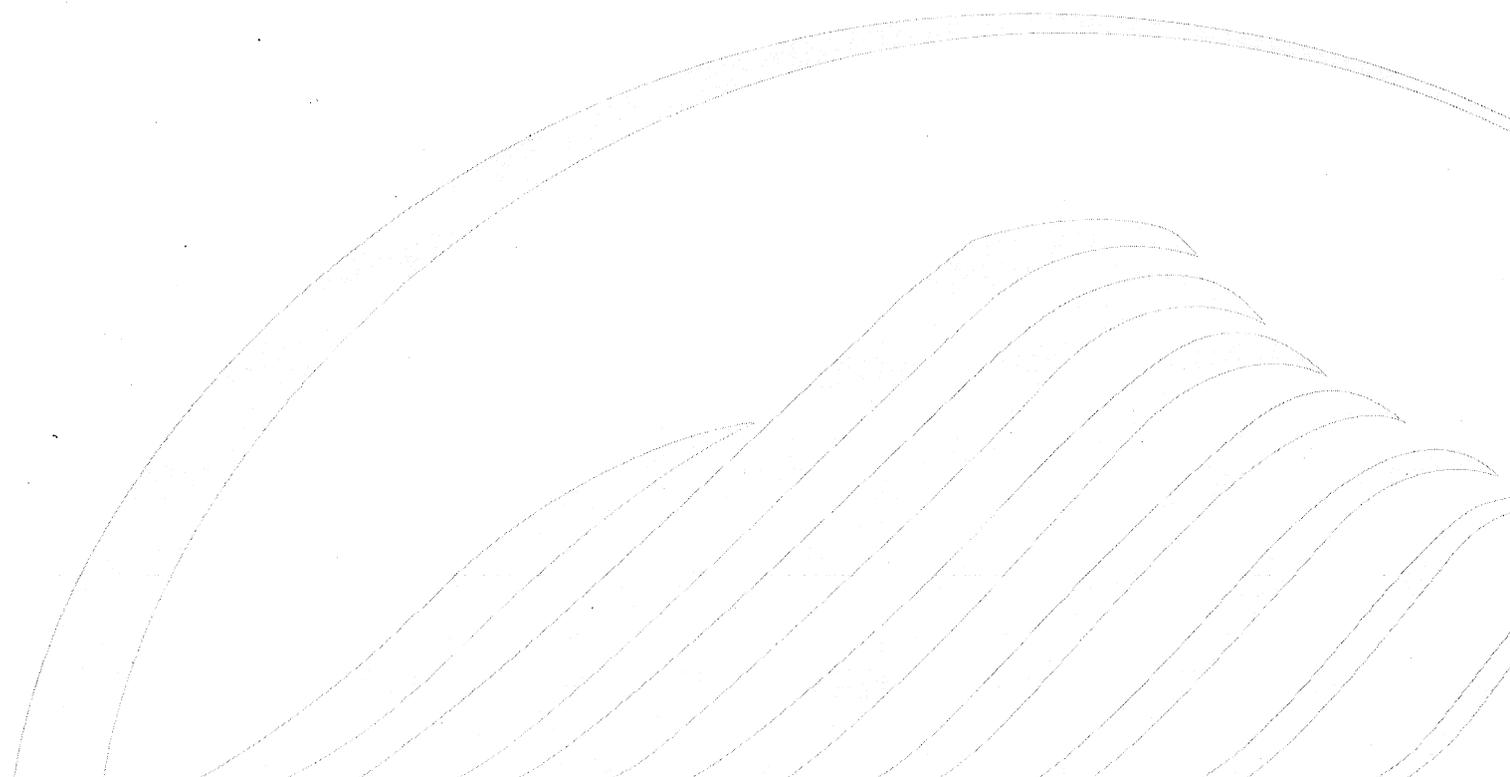
Dear Mr. Eching,

I am happy to report that the Morgan Hill City Council has formally adopted the attached Water Efficient Landscape Ordinance which goes into effect on August 21.

Please do not hesitate to contact me with any questions.

Sincerely yours,

Anthony Eulo
Program Administrator



WATER CONSERVATION IN LANDSCAPING ORDINANCE

Adapted by City of Morgan Hill staff from the regional model prepared by a working group of planning and conservation representatives for jurisdictions within the Santa Clara Valley Water District service area.

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ORDINANCE NO. 1990, NEW SERIES

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORGAN HILL AMENDING CHAPTER 18.73 (WATER CONSERVING LANDSCAPES) OF TITLE 18 (ZONING) OF THE MUNICIPAL CODE OF THE CITY OF MORGAN HILL ESTABLISHING NEW LANDSCAPING REGULATIONS PURSUANT TO THE CALIFORNIA WATER CONSERVATION IN LANDSCAPING ACT

WHEREAS, the City of Morgan Hill recognizes that there is a limited supply of water available to serve the residents and businesses of Morgan Hill; and,

WHEREAS, the City of Morgan Hill recognizes that landscape irrigation requires significant quantities of potable water; and,

WHEREAS, the City of Morgan Hill wishes to encourage the efficient use of water in order to optimize the use of the limited supply; and

WHEREAS, the City of Morgan Hill acknowledges that the State of California has adopted the California Water Conservation in Landscaping Act and the California Department of Water Resources has subsequently developed a model implementing ordinance for jurisdictions to implement or develop and adopt an effectively equivalent ordinance; and

WHEREAS, staff from the City of Morgan Hill have worked with staff from the Santa Clara Valley Water District and other jurisdictions in developing a regional model ordinance that promotes the adoption of similar ordinances throughout Santa Clara County; and

WHEREAS, the City Council wishes to amend the municipal code to ensure that new development in the City will have water-efficient landscaping.

NOW THEREFORE, IN CONSIDERATION OF THE FOREGOING, THE CITY COUNCIL OF THE CITY OF MORGAN HILL DOES HEREBY ORDAIN AND ENACT AS FOLLOWS:

Section 1. Findings.

- A. A reliable minimum supply of potable water is essential to the public health, safety and welfare of the people and economy of City of Morgan Hill.

- B. The City of Morgan Hill is located in a semi-arid region and is dependent upon local surface water, groundwater, and imported water supplies. A growing population, climate change, environmental concerns, and other factors in other parts of the State and western United States, make the region highly susceptible to water supply reliability issues.
- C. There is a need for water conservation program and regulations because there is a limited supply of water available to serve the residents and businesses of Morgan Hill and demand for water has, at times, exceeded supply, threatening a water shortage.
- D. Careful water management that includes active water conservation measures not only in times of drought, but at all times, is essential to ensure a reliable minimum supply of water to meet current and future water supply needs.
- E. Article X, Section 2 of the California Constitution declares that the general welfare requires that water resources be put to beneficial use, waste or unreasonable use or unreasonable method of use of water be prevented, and conservation of water be fully exercised with a view to the reasonable and beneficial use thereof.
- F. Article XI, Section 7 of the California Constitution declares that a city or county may make and enforce within its limits all local, police, sanitary and other ordinances and regulations not in conflict with general laws.
- G. California Water Code Section 375 authorizes water suppliers to adopt and enforce a comprehensive water conservation program to reduce water consumption and conserve supplies.
- H. The adoption and enforcement of a water efficient landscaping ordinance is necessary to comply with California law and to manage the City of Morgan Hill's potable water supply in the short and long-term and to avoid or minimize the effects of drought and shortage within the City of Morgan Hill. Such program is essential to ensure a reliable and sustainable minimum supply of water for the public health, safety and welfare.

Section 2. Declaration of Purpose and Intent.

- A. The purpose of this Ordinance is to reduce water waste in landscaping by promoting the use of region-appropriate plants that require minimal supplemental irrigation, and by establishing standards for irrigation efficiency. This chapter implements the California Water Conservation in Landscaping Act.

Section 3. CEQA Exemption

Therefore, the city finds that this Ordinance and actions taken hereafter pursuant to this Ordinance are categorically exempt under the California Environmental Quality Act, as the project has no possibility of creating significant adverse environmental effects, and the project consists of a minor change in land use limitations (Class 5) in that the approach to water conservation is being modified to result in landscapes that use less water.

Section 4. Chapter 18.73 (Water Conserving Landscapes) of Title 18 (Zoning) is hereby amended in its entirety as follows:

Chapter 18.73

WATER CONSERVATION IN LANDSCAPING

§ 18.73.010 Intent

The intent of this chapter is to reduce water waste in landscaping by promoting the use of region-appropriate plants that require minimal supplemental irrigation, and by establishing standards for irrigation efficiency. This chapter implements the California Water Conservation in Landscaping Act.

§ 18.73.020 Applicability.

- A. The provisions of this chapter shall apply to the following:
1. Construction of new single-family and two-family dwellings, where cumulative landscape area exceeds 2,500 square feet;
 2. Commercial, industrial, office, multi-family residential, and institutional construction where cumulative new or modified landscape area exceeds 2,500 square feet;
 3. Landscape installation or rehabilitation associated with any project requiring design review pursuant to Chapter 18.74 where landscape area exceeds 2,500 square feet;
 4. Any project with landscape area 2,500 square feet or smaller that has been determined by the Community Development Director to require landscape and irrigation design plans. Such determination may be the result of project information provided on checklist (§ 18.73.060), installation inconsistent with information provided on checklist, or other compliance matter.

5. Existing landscapes larger than one acre, including cemeteries, shall be subject to the provisions of Section 18.73.150: Audit of Existing Landscapes; and,
 6. New and rehabilitated cemeteries shall only be subject to the provisions of Section 18.73.090: Water Budget Calculation, 18.73.110: Landscape Installation Report, and 18.73.120: Landscape and Irrigation Maintenance.
- B. The provisions of Section 18.73.060: Water-Efficient Design Checklist, shall apply to:
1. Any project requiring design review pursuant to Chapter 18.74 regardless of the size of landscape area; and,
 2. Any project that includes a new dwelling, regardless of the size of landscape area.
- C. The provisions of this chapter shall not apply to:
1. Construction projects other than new single-family or two-family houses that include irrigated landscape but do not require design review;
 2. Registered local, state or federal historical sites where landscaping establishes an historical landscape style, as determined by the Community Development Director, or by any applicable public board or commission responsible for architectural review or historic preservation;
 3. Surface mine reclamation projects that do not require a permanent irrigation system;
 4. Ecological restoration projects that do not require a permanent irrigation system;
 5. Community gardens or plant collections, as part of botanical gardens and arboretums open to the public; or
 6. Any commercial cultivation of agricultural products; including, but not limited to products of farms, orchards, production nurseries and forests.

§ 18.73.030 Definitions.

The definitions of terms in this section shall apply wherever these terms appear within this chapter, unless it is apparent from the context that a different meaning is intended.

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

- B. "Automatic irrigation controller" means an automatic timing device used to remotely control valves that operate an irrigation system. Automatic irrigation controllers schedule irrigation events using either evapotranspiration (weather-based) or soil moisture data.
- C. "Backflow prevention device" means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.
- D. "Certified irrigation designer" means a person certified to design irrigation systems by an accredited academic institution a professional trade organization or other program such as the US Environmental Protection Agency's WaterSense irrigation designer certification program and Irrigation Association's Certified Irrigation Designer program.
- E. "Certified landscape irrigation auditor" means a person certified to perform landscape irrigation audits by an accredited academic institution, a professional trade organization or other program such as the US Environmental Protection Agency's WaterSense irrigation auditor certification program and Irrigation Association's Certified Landscape Irrigation Auditor program.
- F. "Certified professional" means a certified irrigation designer, certified landscape irrigation auditor, licensed landscape architect, licensed landscape contractor, licensed professional engineer, or any other person authorized by the state to design a landscape, an irrigation system, or authorized to complete a water budget.
- G. "Conversion factor" means the number (0.62) that converts acre-inches per acre to gallons per square foot.
- H. "Ecological restoration project" means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.
- I. "Effective precipitation (Eppt)" means the portion of total precipitation which becomes available for plant growth.
- J. "Estimated Total Water Use (ETWU)" means the total water used for the landscape as described in Section VIII "Water Budget Calculations."
- K. "Evapotranspiration adjustment factor (ETAF)" means a factor of 0.7, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape. ETAF for a *special landscape area* shall not exceed 1.0. ETAF for existing non-rehabilitated landscapes is 0.8.

- L. "Evapotranspiration rate" means the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specified time.
- M. "Hardscape" means any constructed feature in a landscape built of concrete, stone, wood, or other such pervious or non-pervious durable material. Includes, but is not limited to, patios, walkways, and retaining walls.
- N. "Hydrozone" means a portion of the landscaped area having plants with similar water needs. A hydrozone may be irrigated or non-irrigated.
- O. "Invasive plant species" means species of plants listed in the invasive plant inventory of the California Invasive Plant Council (IPC) that have been identified as invasive to areas within the IPC-delineated Central West (CW) region.
- P. "Irrigation audit" means an in-depth evaluation of the performance of an irrigation system performed 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.
- Q. "Irrigation efficiency (IE)" means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum average irrigation efficiency for purposes of this Ordinance is 70%. Greater irrigation efficiency can be expected from well-designed and maintained systems.
- R. "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.
- S. "Landscape architect" means a person who holds a license to practice landscape architecture in California as further defined by the California Business and Professions Code, Section 5615.
- T. "Landscape area" means all the planting areas, turf areas, and water features in a landscape installation. 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 wildland vegetation).
- U. "Landscape contractor" means a person licensed by the State of California to construct, maintain, repair, install, or subcontract the development of landscape systems.

- V. "Landscape project" means an undertaking of landscape design and installation on a particular area of land. A landscape project may be associated with an individual lot, a building project, or a multi-phased development. It may also be a larger, comprehensive landscape scheme that is not coupled with an individual building project.
- W. "Lateral line" means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.
- X. "Low water use plant" means a plant species whose demonstrated water needs are compatible with local climate and soil conditions such that regular supplemental irrigation is not required to sustain the plant after it has become established. Species classified as "very low water use" and "low water use" by WUCOLS, having a regionally adjusted plant factor of 0.0 through 0.3, shall be considered low water use plants.
- Y. "Low-volume irrigation" means the application of irrigation water through a system of tubing or lateral lines and low-volume emitters such as drip and bubblers. Certain rotary emitters designed to provide highly efficient water distribution may also be included in this definition, at the discretion of the Community Development Director.
- Z. "Maximum Applied Water Allowance (MAWA)" means the upper limit of annual applied water for the established landscaped area as specified in Section VIII "Water Budget Calculations."
- AA. "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.
- BB. "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.
- CC. "Native plant" means a plant indigenous to a specific area of consideration. For the purpose of this chapter, the term will refer to plants indigenous to the coastal ranges of Central and Northern California, and more specifically to such plants that are suited to the ecology of the present or historic natural community of the project's vicinity.
- DD. "Noxious weed" means any weed designated by the weed control regulations in the Weed Control Act and identified on a regional district noxious weed control list.

- EE. "Operating pressure" means the pressure at which the parts of an irrigation system are designed by the manufacturer to operate.
- FF. "Overhead sprinkler irrigation system" means a system that delivers water through the air (e.g., spray heads and rotors).
- GG. "Overspray" means irrigation water that is delivered beyond the target area.
- HH. "Plant factor" means a numerical factor, when multiplied by reference evapotranspiration (ET_o), estimates the amount of water needed by plants. Plant factors are based on the publication "Water Use Classification of Landscape Species" (WUCOLS).
- II. "Rain sensor or rain sensing shutoff device" means a component that automatically suspends an irrigation event when it rains.
- JJ. "Recycled water" means treated wastewater of a quality suitable for non-potable uses including landscape irrigation and water features.
- KK. "Reference evapotranspiration (ET_o)" means a standard measurement of environmental parameters that affect the water use of plants.
- LL. "Rehabilitated landscape" means any re-landscaping project that requires a [major project permit types, e.g., design review, grading permit, or use permit], or requires a new or expanded water service application.
- MM. "Runoff" means water that is not absorbed by the soil or landscape to which it is applied and flows from the landscape area.
- NN. "Soil moisture sensor" means a device that measures the amount of water in the soil. The device may also initiate or suspend irrigation.
- OO. "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.
- PP. "Sprinkler head" means a device that delivers water through a nozzle.
- QQ. "Station" means an area served by one valve or by a set of valves that operate simultaneously.
- RR. "Turf" means a ground cover surface consisting of non-native grass species that is customarily mowed. Annual bluegrass, Kentucky bluegrass, perennial ryegrass, red fescue, and tall fescue are examples of cool-season turf grasses. Bermuda

grass, kikuyu grass, seashore paspalum, St. Augustine grass, zoysia grass, and buffalo grass are warm-season turf grasses.

- SS. "Valve" means a device used to control the flow of water in the irrigation system.
- TT. "Water feature" means a landscape design element where open water performs an aesthetic or recreational function. Water features include ponds, fountains, waterfalls and artificial streams. Also includes spas and swimming pools that are ancillary to single-family, two-family and multi-family residential uses.
- UU. "Wet surface area" means the surface area of that portion of a water feature that functions to contain water, such as the water surface of a swimming pool, spa, or garden pond. For a fountain or other feature with flowing water, wet surface area shall be measured as a two dimensional plane bounded by the perimeter of the area where water has been designed to flow.
- VV. "Wildland urban interface" means a geographic area identified by the State of California as a "Fire Hazard Severity Zone," or any area designated by the enforcing agency to be at a significant risk from wildfires.
- WW. "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.

§ 18.73.040 Demonstration of Landscape Water Efficiency

Applicants of projects subject to this ordinance may choose one the following two options to demonstrate that a landscape proposal meets the ordinance's water-efficiency goals.

- A. **Plant-type restriction option:** The plan, checklist and any accompanying documentation must demonstrate all of the following as a means of achieving water efficiency.
1. The total turf area shall not exceed 25% of the landscape area, or 1,250 square feet, whichever is lesser in area. Areas landscaped with turf for recreational purposes that are open to the general public, members of a homeowner's association, or members of a similar common association shall not be limited by this provision.
 2. Within non-turf areas, at least 80% of the plants shall be native or low water-use.
 3. All other applicable design criteria of Section 18.73.050 shall be met.

- B. **Water budget option:** Project applicants may elect to prepare a water budget calculation, per the provisions of Section 18.73.090, as a means of demonstrating water efficiency.

§ 18.73.050 Water-Efficient Design Elements

The elements of a landscape shall be designed to achieve water efficiency consistent with the intent of this chapter. Projects with landscape area of 2,500 square feet or lesser shall demonstrate water efficiency by providing appropriate responses to specific checklist items pursuant to Section 18.73.060. Projects requiring a complete landscape project submittal shall comply with all applicable criteria of this section.

A. **Plant Material:**

1. **General Plant Selection:** Plants shall be chosen and arranged appropriately based upon the site's climate, soil characteristics, sun exposure, wildfire susceptibility and other factors. Plants with similar water needs shall be grouped within hydrozones.
2. **Turf Area Limitation:** The turf area shall not be more than 25% of the landscape area, or 1,250 square feet, whichever is lesser in area, unless the project applicant develops a water budget and the ETWU of the landscape area does not exceed the MAWA.
3. **Turf Slope Limitation:** Turf shall not be planted on slopes greater than 25%.
4. **Turf Width Limitation:** Turf areas shall not be less than eight feet wide.
5. **Low Water Use Plants:** At least 80% of the plants in non-turf landscape areas shall be native plants, or low water using plants, unless the project applicant develops a water budget and the ETWU of the landscaped area does not exceed the MAWA.
6. **Plant Attributes:** The horticultural attributes of plant species (e.g., mature plant size, invasive roots, structural attributes) shall be considered, in order to minimize the potential for damage to property or infrastructure (e.g., buildings, septic systems, sidewalks, power lines).
7. **Fire Considerations:** Fire-prone plant materials and highly flammable mulches are strongly discouraged. In areas designated wildland urban interface, plants shall be selected, arranged and maintained to provide defensible space for wildfire protection, in conformance with Public Resources Code Section 4291.
8. **Invasive Species:** Installation of invasive plant species shall be prohibited.

9. **Invasive Species Removal:** Existing invasive plants and noxious weeds within or adjacent to the proposed landscape area shall be removed prior to installation.
10. **Limitations on Low Water Plants Invalid:** The architectural guidelines, conditions, covenants or restrictions of a common interest development shall not supercede this chapter by either prohibiting low water use plants, or including conditions that have the effect of restricting the use of low water use plants.

B. Irrigation System: An irrigation system shall meet all the requirements listed in this section and the manufacturers' recommendations. The irrigation system and its related components shall be planned and designed to allow for proper installation, management and maintenance. In addition:

1. **Dedicated Meter:** Dedicated landscape water meters shall be required for landscape areas greater than 5,000 square feet, except for those installations where irrigation water is provided by an individual onsite well or where irrigation water is used only for an individual single-family home or an individual two-family home.
2. **Smart Automatic Controllers:** Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data for irrigation scheduling are required.
3. **Controller Sensors:** 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.
4. **Separate Valve Per Hydrozone:** The irrigation hardware for each hydrozone shall include a separate valve. Where feasible, trees shall be placed on separate valves from shrubs, groundcovers, and turf.
5. **Water Waste Prevention - General:** The irrigation system shall be designed to prevent runoff, low head drainage, overspray, or other similar conditions.
6. **Water Waste Prevention - Runoff:** Low-volume irrigation shall be required in mulched areas, in areas with slope greater than 25%, within 24 inches of a non-permeable surface, or in any narrow or irregularly shaped areas that are less than eight (8) feet in width in any direction.
7. **Water Waste Prevention – System Design:** Average irrigation efficiency is assumed to be 70%. Irrigation systems shall be designed, maintained and managed to meet or exceed an average landscape irrigation efficiency of 70%.
8. **Water Waste Prevention - Scheduling:** Irrigation shall be scheduled between 5:00 p.m. and 9:00 a.m., unless unfavorable weather prevents it or otherwise

renders irrigation unnecessary. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.

C. Soil, conditioning, and mulching:

1. Adequate Topsoil: At the time of installation, a minimum of eight (8) inches of non-compacted topsoil shall be available for water absorption and root growth in planted areas. This requirement may be waived where a landscape professional has determined that practical limitations (e.g., slope, other geotechnical factors), necessitate a lesser soil depth that is viable for the chosen plant materials.
2. Soil Amendments: Soil amendments, such as compost or fertilizer, shall be appropriately added according to the soil conditions at the project site and based on what is appropriate for the selected plants.
3. Mulch: A minimum two (2)-inch layer of mulch shall be applied on all exposed soil surfaces of planting areas, except in areas of direct seeding application (e.g. hydro-seed).
4. Slope Stabilization: Stabilizing mulching products shall be used on slopes.

D. Hydrozones:

1. General Hydrozones: Hydrozones shall group plant materials of similar water use, and shall generally demarcate areas of similar slope, sun exposure, soil, and other site conditions appropriate for the selected plants.
2. Separate Valve Per Hydrozone: The flow of water to each hydrozone shall be controlled by a separate valve.
3. Appropriate Sprinklers: Sprinkler heads and other emission devices shall be selected based on what is appropriate for the plant type within that hydrozone.
4. Hydrozone Calculations: Within a hydrozone, low and moderate water use plants may be mixed, but all plants within that hydrozone shall be classified as moderate water use for MAWA calculations. High water use plants shall not be mixed with low or moderate water use plants.

E. Water Features:

1. Recirculation Required: Recirculating water systems shall be used for water features.
2. Calculation of Wet Surfaces: The wet surface area of a water feature shall be counted as an area of high water using plants for purposes of a water budget calculation, except as provided in subsection 3, below.

3. Calculation of Covered Surfaces: The surface area of a pool or spa with a cover shall be counted as an area of medium water using plants for purposes of a water budget calculation.

§ 18.73.060 Water-Efficient Design Checklist

A water-efficient design checklist shall be developed by the City. The checklist shall serve as a preliminary summation of select landscape components to determine whether a proposed landscape is generally consistent with the water-efficiency goals of this chapter.

- A. All applications for design review pursuant to Chapter 18.74 shall include a completed water-efficient design checklist. Building permits for new dwellings shall also include a completed water-efficient design checklist.
- B. The checklist shall be completed by a property owner or certified landscape professional, and shall be submitted to the Community Development Department along with the associated project application.

§ 18.73.070 Components of a Landscape Project Submittal

Unless otherwise specified, the following items shall be submitted to the Community Development Department when a landscape project is subject to the requirements of this chapter.

- A. The following items shall be submitted prior to design review:
 - **Water-Efficient Design Checklist** (§ 18.73.060)
 - **Landscape and Irrigation Design Plans** (§ 18.73.080)
 - **Water Budget Calculations** (§ 18.73.090). Not required if turf limitation option (§ 18.73.040) is utilized.
 - **Soil Analysis Report** (§ 18.73.100). Not required unless requested by City as a condition of permit approval
 - **Landscape Project Review Fee** (§ 18.73.140)
- B. The following item shall be submitted prior to the issuance of final building permit clearance:
 - **Landscape Installation Report** (§ 18.73.110). Shall be submitted following installation of landscaping materials and irrigation hardware.

§ 18.73.080 Landscape and Irrigation Design Plans

Landscape and irrigation design plans are required of landscape projects larger than 2,500 square feet when associated with applications for design review and building permits for new dwellings. Landscape and irrigation design plans may be required of landscape projects 2,500 square feet or smaller if so determined by the Community Development Director (see subsection 18.73.020(A)(4)).

The landscape and irrigation design plan shall be prepared as follows:

- A. The landscape and irrigation design plans shall incorporate all applicable elements of Section 18.73.050. Water-Efficient Design Elements.
- B. The landscape design portion shall be prepared by, and bear the signature of, a licensed landscape architect, licensed landscape contractor, or any other person authorized by the State of California to design a landscape.
- C. The irrigation design portion shall be prepared by, and bear the signature of, a licensed landscape architect, certified irrigation designer, licensed landscape contractor, or any other person authorized by the State of California to design an irrigation system.
- D. The landscape design portion of the landscape and irrigation design plan, at a minimum, shall:
 1. Provide basic project information, such as applicant name, site address, total landscape area and turf area (square feet), irrigation water source, retail water purveyor, and project contacts.
 2. Identify, in tabular form, all plants to be installed as part of the project. The table shall include the following:
 - i. Symbol (representing the plant on the plan).
 - ii. Common name.
 - iii. Botanical name.
 - iv. Container size.
 - v. Quantity.
 - vi. Type (e.g. grass, forb, succulent, vine, shrub, tree).
 - vii. Water-efficient species identification. All "native" and "low water use" plant species (defined in § 18.73.020) shall be so labeled.

- viii. Unique physical specifications of plants (e.g., bare-root, field-potted, multi-trunk), if applicable.
3. Include the following:
 - i. General notes, planting notes, plant layout based on size at maturity, species, and symbol legend.
 - ii. Spacing of proposed plantings.
 - iii. Topography
 - iv. Trunk diameter of all existing trees whose trunk circumference is greater than 18.5 inches, measured 54 inches above grade.
 - v. Existing features to remain, such as trees, fencing, hardscape, etc.
 - vi. Existing features to be removed.
 - vii. Identification of pertinent site factors such as sun exposure, microclimate, property lines, buildings, underground/above-ground utilities, existing drainage features, etc.
 - viii. Proposed grading. For earthwork exceeding 150 cubic yards, or for cuts or fills exceeding five vertical feet, a grading permit will be required.
 - ix. Seed mix, if applicable.
 4. Delineate and label each hydrozone;
 5. Identify each hydrozone as low water, moderate water, high water, or mixed (low/moderate) water use, as defined by WUCOLS;
 6. Identify special landscape areas;
 7. Identify type of mulch and application depth;
 8. Identify type and wet surface area of water features;
 9. Identify hardscapes (pervious and non-pervious); and
 10. Contain the following statement: "I have complied with the criteria of the Water Conservation in Landscaping Ordinance and applied them for the efficient use of water in the landscape design plan."
- E. The irrigation design portion of the landscape and irrigation design plan, at a minimum, shall contain:

1. 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;
 2. Static water pressure at the point of connection to the public water supply;
 3. Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (pressure per square inch) for each station;
 4. Irrigation schedule;
 5. Location and size of separate water meters for landscape (if applicable); and,
 6. The following statement: "I have complied with the criteria of the Water Conservation in Landscaping Ordinance and applied them accordingly for the efficient use of water in the irrigation design plan."
- F. **Grading.** If the landscape project area will be graded, then, at a minimum, grading contours and quantities shall be shown on the landscape design plan. Grading shall meet all applicable requirements of the City grading ordinance ([refer to code section]), including permitting requirements for grading in excess of established permit thresholds.
- A geotechnical engineer should be consulted prior to the installation of landscaping materials and irrigation hardware on slopes greater than 50%, or in any areas where slope stability may be compromised.
- G. **Wildfire Management.** Plant list shall exclude plant types that increase wildfire susceptibility. In areas designated wildland urban interface, the plan shall demonstrate that plants have been selected and arranged to provide defensible space for wildfire protection, in conformance with Public Resources Code Section 4291.
- H. **Storm Water Management.** Storm water best management practices shall be incorporated as appropriate into the landscape installation, the details of which shall be shown on the landscape design plan. Installation shall be subject to the City's National Pollutant Discharge Elimination System (NPDES) storm water discharge permit requirements and Chapter 13.30.

§ 18.73.090 Water Budget Calculation

Project applicant may elect to complete a water budget calculation for the landscape project. A water budget must be completed by a certified professional who is authorized by the State of California to complete a water budget. Water budget calculations shall adhere to the following requirements:

- A. The plant factor used shall be from WUCOLS. The plant factor ranges from 0.0 to 0.3 for low water use plants, from 0.4 to 0.6 for moderate water use plants, and from 0.7 to 1.0 for high water use plants.
- B. The wet surface area of a water feature shall be counted as an area of high water using plants for purposes of a water budget calculation, except as provided in subsection C, below.
- C. The wet surface area of a pool or spa with a cover shall be counted as an area of medium water using plants for purposes of a water budget calculation.
- D. Where low and moderate water use plants are be mixed within a single hydrozone, the entire hydrozone area shall be classified as moderate water use for purposes of a water budget calculation. High water use plants shall not be mixed with low or moderate water use plants.
- E. All special landscape areas shall be identified and their water use included in the water budget calculations.
- F. The reference evapotranspiration adjustment factor (ETAF) for special landscape areas shall not exceed 1.0. The ETAF for the remaining landscaped area shall not exceed 0.7.
- G. Irrigation system efficiency shall be greater than or equal to 70%.
- H. Maximum applied water allowance (MAWA) shall be calculated using the equation below:

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

Where:

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

- I. A project applicant may consider effective precipitation (25% of annual precipitation) in tracking water use and may use the following equation to calculate the MAWA:

$$MAWA = (ET_o - Eppt) (0.62) [(0.7 \times LA) + (0.3 \times SLA)]$$

- J. Estimated total water use (ETWU) shall be calculated for each hydrozone using the equation below. The sum of the ETWU calculated for all hydrozones shall not exceed the MAWA.

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

Where:

ETWU = Estimated Total Water Use per year (gallons)

ET_o = Reference Evapotranspiration (inches)

PF = Plant Factor from WUCOLS (B32-2(n))

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

SLA = Special Landscape Area (square feet)

0.62 = Conversion Factor

IE = Irrigation Efficiency (minimum 0.70)

§ 18.73.100 Soil Analysis.

The Community Development Director shall have discretion to require soil analysis as a condition of approval for any design review where a landscape project submittal is required.

A soil analysis report shall document the various characteristics of the soil (e.g. texture, infiltration rate, pH, soluble salt content, percent organic matter, etc), and provide recommendations for amendments as appropriate to optimize the productivity and water-efficiency of the soil. The soil analysis report shall be made available to the professionals preparing the landscape and irrigation design plans in a timely manner either before or during the design process. A copy of the soils analysis report shall be submitted to the Community Development Department as part of the landscape documentation package.

§ 18.73.110 Landscape Installation Report

Landscape installation assessment for new or rehabilitated landscapes shall be conducted by a certified landscape professional after the landscaping and irrigation system have

been installed. The findings of the assessment shall be consolidated into a landscape installation report.

- A. The landscape installation report shall include, but is not limited to: inspection to confirm that the landscaping and irrigation system were installed as specified in the landscape and irrigation design plan, system tune-up, system test with distribution uniformity, reporting overspray or run off that causes overland flow, and preparation of an irrigation schedule.
- B. The landscape installation report shall include the following statement: "The landscape and irrigation system has been installed as specified in the landscape and irrigation design plan and complies with the criteria of the ordinance and the permit."
- C. The City shall administer ongoing programs that may include, but not be limited to, post-installation landscape inspection, irrigation water use analysis, irrigation audits, irrigation surveys and water budget calculations to evaluate compliance with the MAWA.

§ 18.73.120 Landscape Project Referral

The Community Development Department shall refer the landscape project documents to any department or outside agency whose interests or area of expertise warrants their participation in the review process. Referral agencies may include, but are not limited to the City Public Works Department, Santa Clara Valley Water District, and the Santa Clara County Fire Department.

§ 18.73.130 Landscape Project Review Fee.

The submittal of a landscape and irrigation design plan shall be accompanied by a project review fee as provided by the fee schedule adopted by the City Council.

§ 18.73.140 Audit of Existing Landscapes

The City shall be authorized to require audits to evaluate water use on established landscapes larger than one acre as long as such audits are available without charge. Such audit may also be initiated as a coordinated effort between the City and a water purveyor. When such audit is required, it must be completed by a certified landscape irrigation auditor.

§ 18.73.150 Public Education

All model homes that are landscaped shall have signs installed that provide information on the principles of water-efficient landscaping.

§ 18.73.160 Violations

Any person violating any provision of this chapter shall be deemed guilty of an infraction and shall be punished in accordance with Section 1.24.010B of this code. As an alternative to all other available remedies, including penalties available pursuant to this section, any person violating any provision of this chapter shall be subject to administrative penalties and fines pursuant to the authorities and procedures set forth in Chapter 1.19.

Section 5. Severability

If any section, subsection, sentence, clause or phrase in this Ordinance is for any reason held invalid, the validity of the remainder of the Ordinance will not be affected. The city council hereby declares it would have passed this Ordinance and each section, subsection, sentence, clause or phrase thereof, irrespective of the fact that one or more sections, subsections, sentences, clauses, or phrases or is declared invalid.

Section 6. Effective Date; Posting.

This Ordinance shall take effect thirty (30) days after its second reading. This Ordinance shall be posted at City Hall.

This ordinance was introduced at a meeting of the City Council held on the 21st day of July, 2010, and adopted at a meeting held on the 28th day of July, 2010, and said ordinance was duly passed and adopted in accordance with law by the following vote:

AYES: COUNCIL MEMBERS:
NOES: COUNCIL MEMBERS:
ABSTAIN: COUNCIL MEMBERS:
ABSENT: COUNCIL MEMBERS:

ATTEST:

APPROVED:

IRMA TORREZ, City Clerk

STEVE TATE, Mayor

∞ CERTIFICATE OF THE CITY CLERK ∞

I, IRMA TORREZ, CITY CLERK OF THE CITY OF MORGAN HILL, CALIFORNIA, do hereby certify that the foregoing is a true and correct copy of Ordinance No. 1990, New Series, adopted by the City Council of the City of Morgan Hill, California at their regular meeting held on the 28th day of July, 2010.

WITNESS MY HAND AND THE SEAL OF THE CITY OF MORGAN HILL.

DATE: _____

IRMA TORREZ, City Clerk