

# **Water Efficient Landscape Ordinance for Commercial Business Number**

**Ordinance Number <City to insert here>**

## **Section 1. Preamble**

- A. Whereas, [the City] desires to promote the design, installation and maintenance of commercial landscapes that are both attractive and water efficient;
- B. Whereas, [the City] can accomplish these goals by adopting this ordinance; and,
- C. Whereas, [the City] has the authority to adopt this ordinance pursuant to Utah Code Annotated (Rep. Vol. 1999) § 10-3-702, and hereby exercises its legislative powers in doing so.

## **Section 2. Ordaining Clause**

Be it ordained by the [the City], that the Water Efficient Landscape Ordinance for Commercial Business, Number \_\_\_\_\_.

## **Section 3. Title, Water Efficient Landscape Requirements**

An ordinance amending the Zoning Code of the City of \_\_\_ so as to add a Water Efficient Landscape Ordinance of minimum landscape requirements. This ordinance shall be referred to as “\_\_\_ City Water Efficient Landscape Ordinance”.

## **Section 4. Purpose**

The City Council has found that it is in the public interest conserve the public’s water resources and to promote water efficient landscaping. The purpose of this ordinance is to protect and enhance the community’s environmental, economic, recreational, and aesthetic resources by promoting efficient use of water in the community’s landscapes, reduce water waste and establish a structure for the designing, installing and maintaining of water efficient landscapes throughout the City.

## **Section 5. Definitions**

The following definitions shall apply to this ordinance:

Administrative Standards: The set of rules, procedures and requirements set forth in a landscape ordinance associated with making permit application, assembling materials for public review, meeting the requirements of the landscape ordinance, seeking approvals, enforcement, conducting site inspections and filing reports.

Bubbler: An irrigation head that delivers water to the root zone by “flooding” the planted area, usually measured in gallons per minute. Bubblers exhibit a trickle, umbrella or short stream pattern.

Drip Emitter: Drip irrigation fittings that deliver water slowly at the root zone of the plant, usually measured in gallons per hour.

Evapotranspiration: The quantity of water evaporated from adjacent soil surfaces and transpired by plants during a specific time, expressed in inches per day, month or year.

Extra-Drought Tolerant Plant: A plant that can survive without irrigation throughout the year once established, although supplemental water may be desirable during drought periods for improved appearance and disease resistance.

Grading Plan: The Grading Plan shall be shown at the same scale as the Planting and Irrigation Plan. The Grading Plan shows all finish grades, spot elevations as necessary and existing and new contours with the developed landscaped area.

Ground cover: Material planted in such a way as to form a continuous cover over the ground that can be maintained at a height not more than twelve (12) inches.

Hardscape: Patios, decks and paths. Does not include driveways and sidewalks.

Irrigated Landscaped Area: All portions of a development site to be improved with planting and irrigation. Natural open space areas shall not be included in the Irrigated Landscaped Area.

Irrigation Efficiency: The measurement of the amount of water beneficially applied, divided by the total amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system hardware characteristics and management practices.

Irrigation Contractor: A person who has been certified by the Irrigation Association (IA) to install irrigation systems.

Irrigation Designer: A person who has been certified by the Irrigation Association to prepare irrigation system designs, and/or a Landscape Architect.

Irrigation Plan: The irrigation plan shall be shown at the same scale as the planting plan. The irrigation plan shall show the components of the irrigation system with water meter size, backflow prevention, precipitation rates, flow rate and operating pressure for each irrigation circuit, and identification of all irrigation equipment.

Landscape Architect: A person who holds a certificate to practice landscape architecture in the state of Utah.

Landscape Irrigation Auditor: A person who has been certified by the Irrigation Association to conduct a landscape irrigation audit.

Landscape Designer: A person who has been certified by the Utah Nursery and Landscape Association (UNLA) to prepare Landscape Plans.

Landscape Plan Documentation Package: The preparation of a graphic and written criteria, specifications, and detailed plans to arrange and modify the effects of natural features such as plantings, ground and water forms, circulation, walks and other features to comply with the provisions of this ordinance. The Landscape Plan Documentation Package shall include a project data sheet, a Planting Plan, an Irrigation Plan, a Grading Plan, a Soils Report, a Landscape Water Allowance, and an Irrigation Schedule.

Landscape Water Allowance: For design purposes, the upper limit of annual applied water for the established landscaped area. It is based upon the local Reference Evapotranspiration Rate, the  $ET_0$  adjustment factor and the size of the landscaped area.

Landscape Zone: A portion of the landscaped area having plants with similar water needs, areas with similar microclimate (i.e., slope, exposure, wind, etc.) and soil conditions, and areas that will be similarly irrigated. A landscape zone can be served by one irrigation valve, or a set of valves with the same schedule.

Landscaping: Any combination of living plants, such as trees, shrubs, vines, ground covers, flowers, or grass; natural features such as rock, stone, or bark chips; and structural features, including but not limited to, fountains, reflecting pools, outdoor art work, screen walls, fences or benches.

Mulch: Any material such as bark, wood chips or other materials left loose and applied to the soil.

Non-Drought Tolerant Plant: A plant that will require regular irrigation for adequate appearance, growth and disease resistance.

Planting Plan: A Planting Plan shall clearly and accurately identify and locate new and existing trees, shrubs, Ground Covers, Turf areas, driveways, sidewalks, Hardscape features, and fences.

Precipitation Rate: The depth of water applied to a given area, usually measured in inches per hour.

Rain Shut-Off Device: A device wired to the automatic controller that shuts off the irrigation system when it rains.

Reference Evapotranspiration Rate or  $ET_0$ : A standard measurement of environmental parameters which affect the water use of plants.  $ET_0$  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. The average annual  $ET_0$  for the \_\_ City area is \_\_ inches.

Runoff: Irrigation water that is not absorbed by the soil or landscape area to which it is applied and which flows onto other areas.

Soils Report: A report by a soils laboratory indicating soil type(s), soil depth, uniformity, composition, bulk density, infiltration rates, and pH for the top soil and subsoil for a given site. The soils report also includes recommendations for soil amendments.

Spray Sprinkler: An irrigation head that sprays water through a nozzle.

Stream Sprinkler: An irrigation head that projects water through a gear rotor in single or multiple streams.

Turf: A surface layer of earth containing mowed grass with its roots.

Water-Conserving Plant: A plant that can generally survive with available rainfall once established although supplemental irrigation may be needed or desirable during spring and summer months.

Water Audit: An on-site survey and measurement of irrigation equipment and management efficiency, and the generation of recommendations to improve efficiency.

## **Section 6. Applicability of Water Efficient Landscape Ordinance**

The provisions of this ordinance shall apply to all new and rehabilitated landscaping for public agency projects, private development projects, developer-installed landscaping in multi-family residential projects, and developer-installed landscaping in single-family projects that require a permit.

This section does not apply to:

- Home-owner provided landscaping at single family projects;
- Registered historical sites;
- Landscapes that are irrigated exclusively with secondary water (non-potable); or
- Projects with a total irrigated landscaped area less than 2,500 square feet.

In addition, sports fields, turf play areas within public parks, school yards, golf courses and cemeteries are exempt from the Landscape Water Allowance limitations outlined in Section 7F; however, all other portions of this ordinance shall be applicable.

## **Section 7. Documentation**

**Landscape Plan Documentation Package.** A copy of a Landscape Plan Documentation Package shall be submitted to and approved by the City prior to the issue of any permit. A copy of the approved Landscape Plan Documentation Package shall be provided to the property owner or site manager and to the local retail water purveyor. The Landscape Plan Documentation Package shall be prepared by a registered Landscape Architect or a Landscape Designer certified by the Utah Nursery and Landscape Association (UNLA). The Irrigation Plan shall be prepared by an Irrigation Designer certified by the Irrigation Association (IA) and/or a Landscape Architect. The Landscape Plan Documentation Package shall consist of the following items:

- A. Project Data Sheet. The Project Data Sheet shall contain the following:
1. Project name and address;
  2. Applicant or applicants agent's name, address, phone and fax number;
  3. Landscape Designer/Landscape Architect's name, address, phone and fax number; and
  4. Landscape contractor's name, address, phone and fax number, if available at this time.
- B. Planting Plan. A detailed Planting Plan shall be drawn at a scale the clearly identifies the following:
1. Location of all plant materials, a legend with botanical and common names, and size of plant materials;
  2. Property lines and street names;
  3. Existing and proposed buildings, walls, fences, utilities, paved areas and other site improvements;
  4. Existing trees and plant materials to be removed or retained;
  5. Designation of Landscape Zones, and
  6. Details and specifications for tree staking, soil preparation, and other planting work.
- C. Irrigation Plan. A detailed Irrigation Plan shall be drawn at the same scale as the planting plan and shall contain the following information:
1. Layout of the irrigation system and a legend summarizing the type and size of all components of the system, including manufacturer name and model numbers;
  2. Static water pressure in pounds per square inch (psi) at the point of connection to the public water supply;
  3. Flow rate in gallons per minute and design operating pressure in psi for each valve and precipitation rate in inches per hour for each valve with sprinklers, and
  4. Installation details for irrigation components.

- D. Grading Plan. A Grading Plan shall be drawn at the same scale as the Planting Plan and shall contain the following information:
1. Property lines and street names, existing and proposed buildings, walls, fences, utilities, paved areas and other site improvements, and
  2. Existing and finished contour lines and spot elevations as necessary for the proposed site improvements.
- E. Soils Report. A Soils Report will be required where irrigated landscaped areas exceed 2,500 square feet. The Soils Report shall describe the depth, composition, and bulk density of the top soil and subsoil at the site, and shall include recommendations for soil amendments. The Planting Plan shall incorporate the recommendations of the Soils Report into the planting specifications.
- F. Landscape Water Allowance. The annual Landscape Water Allowance shall be calculated using the following equation:

$$\text{Landscape Water Allowance} = ET_o \times 1.0 \times 0.62 \times A$$

where Landscape Water Allowance is in gallons per year

$ET_o$  = Reference Evapotranspiration in inches per year

1.0 =  $ET_o$  adjustment factor, 100% of turf grass  $ET_o$  (water year adjustment factor)

0.62 = conversion factor (to gallons per square feet)

A = total Irrigated Landscape Area in square feet

- G. Irrigation schedule. A monthly Irrigation Schedule shall be prepared that covers the initial 120-day plant establishment period and the typical long-term use period. This schedule shall consist of a table with the following information for each valve:
1. Plant type (for example, turf, trees, low water use plants);
  2. Irrigation type (for example, sprinklers, drip, bubblers);
  3. Flow rate in gallons per minute;
  4. Precipitation rate in inches per hour (sprinklers only);
  5. Run times in minutes per day;
  6. Number of water days per week, and

7. Cycle time to avoid Runoff.

## **Section 8. Landscape Design Standards**

- A. **Plant Selection.** Plants selected for landscape areas shall consist of plants that are well-suited to the microclimate and soil conditions at the project site. Plants with similar water needs shall be grouped together as much as possible.

For projects located at the interface between urban areas and natural open space (non-irrigated), Extra-Drought Tolerant Plants shall be selected that will blend with the native vegetation and are fire resistant or fire retardant. Plants with low fuel volume or high moisture content shall be emphasized. Plants that tend to accumulate excessive amount of dead wood or debris shall be avoided.

Areas with slopes greater than 33% shall be landscaped with deep-rooting, Water-Conserving Plants for erosion control and soil stabilization.

Parking strips and other landscaped areas less than eight (8) feet wide shall be landscaped with Water-Conserving Plants.

- B. **Mulch.** After completion of all planting, all irrigated non-turf areas shall be covered with a minimum four (4) inch layer of Mulch to retain water, inhibit weed growth, and moderate soil temperature. Non-porous material shall not be placed under the mulch.
- C. **Soil Preparation.** Soil preparation will be suitable to provide healthy growing conditions for the plants and to encourage water infiltration and penetration. Soil preparation shall include scarifying the soil to a minimum depth of six (6) inches and amending the soil with organic material as per specific recommendations of the Landscape Designer/Landscape Architect based on the Soils Report.

## **Section 9. Irrigation Design Standards**

- A. **Irrigation design standards** for this ordinance shall be as outlined in the latest version of the “Minimum Standards for Efficient Landscape Irrigation System Design and Installation” prepared by the Utah Irrigation Association. In addition, the following portions of this section shall also be applicable.
- B. **Pressure Regulation.** A pressure regulating valve shall be installed and maintained by the consumer if the static service pressure exceeds 80 pounds per square inch (psi). The pressure-regulating valve shall be located between the meter and the first point of water use, or first point of division in the pipe, and shall be set at the manufacturer’s recommended pressure for the sprinklers.
- C. **Landscape Water Meter.** A water meter shall be installed for landscape irrigation systems, and the landscape water meter shall be separate from the water meter

installed for indoor uses. The size of the meter shall be determined based on irrigation demand.

- D. Automatic Controller. All irrigation systems shall include an electric automatic controller with multiple program and multiple repeat cycle capabilities and a flexible calendar program. All controllers shall be equipped with an automatic rain shut-off device, and the ability to adjust run times based on a percentage of maximum  $ET_o$ .
- E. On slopes exceeding 33 percent, the irrigation system shall consist of Drip Emitters, Bubblers or sprinklers with a maximum Precipitation Rate of 0.85 inches per hour and adjusted sprinkler cycle times to eliminate Runoff.
- F. Each valve shall irrigate a landscape with similar site, slope and soil conditions and plant materials with similar watering needs. Turf and non-turf areas shall be irrigated on separate valves. Drip Emitters and sprinklers shall be placed on separate valves.
- G. Drip Emitters or a Bubbler shall be provided for each tree. Bubblers shall not exceed 1.5 gallons per minute per device. Bubblers for trees shall be placed on a separate valve unless specifically exempted by the City due to the limited number of trees on the project site.
- H. Sprinklers shall have matched Precipitation Rates with each control valve circuit.
- I. Check valves shall be required where elevation differences will cause low-head drainage. Pressure compensating valves and sprinklers shall be required where a significant variation in water pressure will occur within the irrigation system due to elevation differences.
- J. Drip irrigation lines shall be undergrounded, except for Emitters and where approved as a temporary installation. Filters and end flush valves shall be provided as necessary.
- K. Valves with spray or stream sprinklers shall be scheduled to operate between 6 p.m. and 10 a.m. to reduce water loss from wind and evaporation.
- L. Program valves for multiple repeat cycles where necessary to reduce runoff, particularly on slopes and soils with slow infiltration rates.

#### **Section 10. Plan Review, Construction Inspection and Post-Construction Monitoring**

- A. As part of the Building Permit approval process, a copy of the Landscape Plan Documentation Package shall be submitted to the City for review and approval before construction begins. With the Landscape Plan Documentation Package, a copy of the Landscape Water Allowance Worksheet shall be completed by a landscape designer and submitted to the City. Once approved, the Landscape Water Allowance Worksheet will be transmitted to the local water purveyor.

- B. All Landscape Plan Documentation Packages submitted must be certified by a licensed Landscape Architect or UNLA certified Landscape Designer. The Irrigation Plan must be prepared by a IA certified Irrigation Designer, or a Landscape Architect.
- C. All landscape irrigation systems shall be installed by an IA certified Irrigation Contractor. The certified person representing the contracting firm shall be a full-time employee of the firm and shall be directly involved with the project including at least weekly site visits.
- D. All installers, designers, and auditors shall meet state and local license, insurance, and bonding requirements, and be able to show proof of such.
- E. During construction, site inspection of the landscaping may be performed by the City Building Inspection Department.
- F. Following construction and prior to issuing the approval for occupancy, an inspection shall be scheduled with the Building Inspection Department to verify compliance with the approved landscape plans. The Certificate of Substantial Completion shall be completed by the property owner, contractor or Landscape Designer/Landscape Architect and submitted to the City.
- G. Following construction and prior to issuing the approval for occupancy, a Water Audit will be conducted by a IA certified Landscape Irrigation Auditor. The auditor shall be independent of the contractor, design firm, and owner/developer of the project. The water performance audit will verify that the irrigation system complies with the minimum standards required by this ordinance. The minimum efficiency required for the irrigation system is 60% for the distribution efficiency for all fixed spray systems and 70% distribution efficiency for all rotor systems. The auditor shall furnish a certificate to the City, designer, installer, and owner/developer certifying compliance with the minimum distribution requirements, and an irrigation schedule. Compliance with this provision is required before the City will issue the letter of final acceptance.
- H. The City reserves the right to perform site inspections at any time before, during or after the irrigation system and landscape installation, and to require corrective measures if requirements of this ordinance are not satisfied.

**Section 11. Penalty** [If applicable, a statement may be created to describe the penalty for violation of this ordinance.]

**Section 12. Effective Date**

This ordinance shall be effective as of \_\_\_\_\_.

Dated: \_\_\_\_\_

\_\_\_\_\_ [the City]

By \_\_\_\_\_

Its \_\_\_\_\_

Mayor

[Municipal Recorder Attestation and Seal]