



Model Water Efficient Landscaping Regulation for Municipalities

The Environmental Protection Agency (EPA) estimates that one-third of all residential water use is for landscape irrigation. New Hampshire's water use data shows that many water systems have a summer water demand that is twice the volume of winter demand, due in large part to lawn irrigation. This seasonal disparity continues to grow as many new residential developments include in-ground systems to irrigate lawns that have insufficient soils to retain moisture and support turf. In fact, discretionary use, such as lawn irrigation, is significant enough that many water systems must develop new sources in order to meet higher peak demands. Alternatively, some water systems resort to enacting watering restrictions and bans during summer.

Increasing summer water demand comes when there is naturally less water available in the environment due to warmer temperatures and plant uptake. As more water is used to irrigate lawns, less water is available to satisfy important environmental needs and other opportunities for beneficial use.

To assist municipalities, the following model regulation for landscape water efficiency was developed. The regulation recommends area limits for lawns, utilization of native plants, retention of mature trees, minimum loam requirements, and water efficiency provisions for in-ground irrigation systems.

MODEL REGULATIONS FOR WATER EFFICIENT LANDSCAPING FOR SUBDIVISION AND SITE PLAN APPLICATIONS

ARTICLE __: WATER EFFICIENT LANDSCAPING

I. PURPOSE

To protect, enhance and promote the economic, ecological and aesthetic environment by establishing water efficiency landscape elements to protect and conserve water resources while promoting the wise use thereof.

II. AUTHORITY

The provisions of this Article are adopted pursuant to RSA 31:39, Powers and Duties of Towns.

III. APPLICABILITY

- A. The requirements of this section shall apply to all applications for the subdivision of land.

- B. The requirements of this section shall apply to all applications for site plan review approval.
- C. Exemptions: Subject to determination by the Planning Board, applications that meet both of the following criteria shall be exempt from the requirements of this section:
 - i. Automatic irrigation systems are prohibited through a deed restriction from being installed on the lot or lots; and
 - ii. The lot or lots have less than *Insert Number* square feet of landscape area.

IV. DEFINITIONS

- A. **Artificially watered lawn:** Areas of grass that will receive artificial water to supplement precipitation.
- B. **Deed Restriction:** A restriction on the use of land usually set forth in the deed for the property. A deed restriction is also sometimes referred to as a “restrictive covenant.”
- C. **Distribution Uniformity:** A measure of how uniformly water is applied to an area being watered, expressed as a percentage.
- D. **Drought Tolerant or Drought Resistant:** A tree, shrub, or other plant that once established, will require limited or no regular irrigation for adequate appearance, growth and disease resistance.
- E. **Ground Cover:** Low plants that generally form a continuous cover over time that are typically 3 feet or less in height.
- F. **Invasive (Plant) Species:** Any plant species included on the most current list of prohibited invasive species prepared by the New Hampshire Invasive Species Committee in accordance with New Hampshire Agricultural Rule NH AGR 3800.
- G. **Irrigation System:** An automated system of pipes, spray heads, and nozzles designed to artificially apply water to a landscape.
- H. **Loam:** Loose friable topsoil that combines relatively equal parts of sand, clay, and silt and that is generally free from stones, lumps, stumps, roots, weeds, or similar objects larger than 2 inches.
- I. **Landscape Area:** The designed area of landscape excluding the footprint of the home and permanent hardscape areas such as driveways, sidewalks and patios.
- J. **Lower Quarter Distribution Uniformity:** The ratio of the average of the lowest 25 percent of uniformity measurements to the overall average distribution uniformity measurement.
- K. **Microirrigation System:** The frequent application of small quantities of water on or below the soil surface as drops, tiny streams, or miniature spray through emitters or applicators placed along a water delivery line. Microirrigation encompasses a number of methods or concepts such as bubbler, drip, trickle, mist, or spray and subsurface

irrigation. For purposes of this regulation, microirrigation includes emission devices that have flow rates less than 30 gallons per hour.

- L. Maintain:** In reference to landscaping includes mulching, mowing, spraying, irrigating, fertilizing, propping, bracing, treating for disease or injury, snow removal, proper pruning techniques based on current arboriculture standards, and any other similar acts which promote the life, growth, health, safety, or beauty of the landscape vegetation.
- M. Mulch:** An organic material such as tree bark, wood chips, pine needles, leaf litter, grass clippings, or seed hulls used to control weed growth, reduce soil erosion and reduce water loss.
- N. Native (Plant) Species:** Plants that currently (or historically) grow as part of natural ecosystems that have co-evolved within the same planting zone.
- O. Overspray or Runoff:** Water that is not applied to or remains in the landscape area.
- P. Shrub:** A bushy, woody-stemmed plant, usually with several permanent stems usually less than 15-20 feet at maturity.
- Q. Site:** The area, lot, or lots upon which development is to occur or has occurred.
- R. Sprinkler Irrigation:** Type of irrigation-using mechanical devices with nozzles (sprinklers) to distribute the water by converting water pressure to a high velocity discharge stream or streams.
- S. Tree:** Any self-supporting woody perennial plant which normally attains an overall height of at least 10 feet at maturity, either with one main stem or trunk or multiple stems or trunks as commonly grown in the nursery industry.
- T. Vegetation:** Includes trees, plants, shrubs, vines, groundcovers, grasses, herbaceous perennials, or other forms of plant growth whether naturally occurring or planted.
- U. WaterSense:** An EPA-sponsored partnership program that seeks to protect the future of our nation's water supply by promoting water efficiency and enhancing the market for water-efficient products, programs and practices.

V. MINIMUM PLAN/PLANT REQUIREMENTS

- A.** Subdivision and site plan review regulations shall include:
 - i.** Location: Address or Map, Parcel, and Block Number
 - ii.** Landscape Design
 - a.** Total landscaped area in square feet.
 - b.** Total lawn area in square feet.
 - c.** Total irrigated area in square feet.
 - d.** List of tree and shrub plantings to be used.

e. Grass mix to be used.

iii. Irrigation System Details

a. Name of irrigation system designer.

b. Name of irrigation system installer.

c. Number of irrigation zones.

d. Number of irrigation heads.

e. Design flow rate of spray heads.

f. Proposed irrigation system controller and devices that will be used to prevent irrigation from occurring when it is not needed.

VI. SITE REQUIREMENTS

A. General Site Requirements

- i. Site disturbance shall be minimized and existing vegetation and undisturbed soil shall be retained whenever possible. When site disturbance is necessary, top soil shall be stock-piled and stabilized for on-site redistribution within new landscaped areas. Stock-piled soil shall remain covered to prevent soil loss and sedimentation of nearby surface waters.
- ii. Existing non-invasive vegetation shall be preserved wherever possible. Maximum effort should be made to preserve small stands of trees, rather than individual trees, to minimize the potential for damage due to wind, grade changes and soil compaction.

B. Artificially Watered Lawn Areas

- i. All lawn areas to be artificially watered shall be underlain by no less than six inches of loam amended to consist of no less than 10 percent organic materials by volume.
- ii. Water efficient grass mixes consisting of a minimum of two different grass species with three or more preferred shall make up the seed or sod. Mixes with a high percentage of fine fescues are preferred.
- iii. Artificially watered lawns may comprise no more than 40% of the total landscape area.

C. Tree & Plant Areas

- i. Trees and plants shall be selected based on consideration of site conditions as well as tree and plant function. Use of native species is encouraged; hybrid varieties that are non-native and non-invasive are permitted if they are drought tolerant and do not require supplemental irrigation after establishment. Use of invasive

species included on the N.H. Invasive Species Committee's most current list of prohibited invasive species is not permitted in accordance with New Hampshire Agricultural Rule NH AGR 3800.

- ii. All exposed soils shall be covered and maintained with a two to three-inch layer of mulch.

D. Irrigation Systems

- i. Irrigation systems are prohibited unless the guidelines established by this section are followed.
- ii. Irrigation systems shall be designed and installed by an irrigation professional certified by the EPA's WaterSense Program. If three or less WaterSense certified irrigation professionals provide service to the area, a non-WaterSense certified irrigation professional may be utilized if permission is obtained from the Planning Board. EPA provides a [list of certified partners by state](#).
- iii. Irrigation systems shall be designed and installed to sustain the landscape without creating runoff or direct overspray during a minimum operating duration.
- iv. Irrigation systems shall achieve a lower quarter distribution uniformity (DULQ) of 65% or greater. Distribution uniformity shall be measured on the largest spray-irrigated area.
- v. Irrigation systems shall be equipped with technology that inhibits or interrupts operation of the irrigation system during periods of rainfall or sufficient moisture (e.g., rain sensors, soil moisture sensors).
- vi. Sprinkler heads shall have a four inch or greater popup height and matched precipitation nozzles.
- vii. Irrigation systems shall be equipped with irrigation controllers that contain the following features:
 - a. Multiple programming capabilities – shall be capable of storing a minimum of three different programs to allow for separate schedules.
 - b. Multiple start times – shall be capable of a minimum of three different start times to allow for multiple irrigation cycles on the same zone for areas prone to runoff.
 - c. Variable run times – shall be capable of varying run times (for example, one minute to a minimum of one hour).
 - d. Variable scheduling – shall be capable of interval scheduling (minimum of 14 days) to allow for watering on even day scheduling, odd day scheduling, calendar day scheduling, and interval scheduling.
 - e. Percent adjust (water budget) feature – shall include a "Percent Up/Down Adjust" feature (or "Water Budget" feature) such as a button

If any provision of this regulation is found to be unenforceable, such provision shall be considered separable and shall not be construed to invalidate the remainder of the regulation.

If there are other provisions within local or state regulations that are more stringent, those provisions shall apply.

Effective Date: The regulation shall take effect upon approval by the local legislative body. This regulation shall take effect upon approval by the Planning Board after a public hearing held in accordance with state statute.

Revised: May 2020