

Attachment I:
Landscape Maintenance and Water Management

DEVENS PUBLIC SAFETY FACILITY

LANDSCAPE MAINTENANCE AND WATER MANAGEMENT

LAWN MAINTENANCE

MOWING

Proper mowing is an integral part of any good turf maintenance program. Without it, the finest in fertilization, watering and other vital maintenance practices would be completely ineffective. Proper mowing will help control dicot weeds; help the turf survive during periods of extreme heat, and gain strength and vigor to resist disease and other infestations.

1. **Mowing height:** The proper mowing height will vary somewhat according to the type of grass. The most common type of lawn contains a mixture of bluegrass, fine fescue and perennial rye which should be mowed at 2—3 inches. Sod lawns which are a mixture of bluegrass should not be mowed low, as this would be detrimental to the turf.
2. **Mowing frequency:** The basic rule of thumb for mowing frequency is to never remove more than 1/3 of the grass blade in one mowing. Example: If you want to mow your turf at 2 inches you should cut it when it reaches 3 inches. Removing more than 1/2 of the grass plant at a time can put the plant into shock, thus making it more susceptible to stress disease and weed infestation. Mowing frequency will vary with the growing season and should be set by the plant height and not a set date. It will often be necessary to mow twice a week during periods of surge growth to help maintain plant health and color. Mowing should be cut back during periods of stress, particularly drought-related stress.
3. **Grass clippings** should be removed whenever they are thick enough to layer the turf. The returning of clippings to the soil actually adds nutrients and helps retain moisture. Heavily clumped grass clippings are a sign of infrequent mowing, calling for an adjustment in the mowing schedule.
4. **When mowing any area,** try to alternate mowing patterns. This tends to keep grass blades more erect and assures an even cut. A dull mower will cause color loss due to the tearing of the turf plant, and since mowing will ultimately determine the appearance of any turf area there is an absolute necessity for a clean sharp cut.

WATERING

As noted in the Water Management Attachment, watering of lawns must be addressed more diligently during initial seeding and germination than after lawns have become established. Newly seeded lawn areas must be watered every other day for two weeks, after which the amount and frequency will depend on the time of year, temperatures, and amount of natural rainfall is provided. Proper irrigation is essential to turf color and vigor, especially during hot dry spells that bring on drought and heat stress. Drought is first indicated by irregular patches of lawn turning a bluish gray in color. Another indication is footprints that remain after walking on the turf. Hillsides and southern exposures are especially prone to drought and often need extra irrigation.

Proper irrigation should be infrequent but heavy. The soil should be soaked to the depth of 4—6 inches. This will help promote a deep root zone. Light, frequent watering will promote a shallow root zone. It is best to water in the early morning.

After establishment of the specified lawn grass, watering intervals and intensities can be gradually reduced to a point where water should only be required during times of drought and extreme heat.

FERTILIZING, WEED & PEST CONTROL

In order to maintain turf grass health, vigor and color, nutrients in the way of fertilizer must be added to the soil. Recommendations for fertilization are all lawn areas to be treated with fertilizer at the rate of one (1)



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pound of nitrogen per thousand square feet, per application. The total of four pounds of nitrogen per thousand square feet, per year is optimum. Fertilizer should be a balanced slow release, sulfur coated type fertilizer.

WEED CONTROL

All turf areas will require some weed control, both of weed grasses and dicot weeds. Weeds should be treated at the appropriate time and with a material labeled for the target weed. Please refer to the fertilizer weed and pest schedule for timing.

PEST CONTROL

All turf areas will require some pest control. Pests should be treated at the appropriate time and with a material labeled for the target pest. Please refer to the fertilizer, weed and pest schedule for timing.

LIME

A common cause of unhealthy lawns is acid soil. When the soil PH is below the neutral range (between 6—7) vital plant nutrients become fixed in the soil and cannot be absorbed by the grass plant. Lime corrects an acid soil condition, supplying calcium for plant growth and improves air and water circulation. Limestone applied at a rate of 50 lbs. per thousand square feet will adjust the soil PH one point over a period of 6 to 9 months. Soil testing will determine more precisely how much lime is required. Liming is best applied in early spring or in mid- to late fall.

TREES, SHRUBS, AND GROUND COVER MAINTENANCE

Even though the trees, shrubs and ground cover areas in your landscape do not require the same time—consuming attention as the turf, they nevertheless must be attended to on a weekly basis. The work to be done should include:

WATERING

All new plantings need to be watered once a week in cool weather, twice a week during warm weather, and up to three times a week during periods of extreme heat and drought. Trees and shrubs should be watered in such a manner as to totally saturate the soil in the root zone area. The use of slow-release watering bags are excellent tools for providing water for trees during their establishment period. Overwatering or constant saturation of the soil must be avoided as this could lead to root rot and other disease problems. The use of a soil moisture meter can help you monitor the soils water intake.

TREE PRUNING

All branches that are dead, broken, scared or crossing should be removed. All cuts should be made at the collar and not cut flush with the base.

SHRUB PRUNING

All shrubs should be pruned of extensive growth. Hand snips should be used to maintain a more natural look or two-handed shears can be used for a more formal appearance.

MULCH

Maintain a 2-3" maximum, and keep free of weeds either by hand weeding or by the use of a pre-emergent weed control such as Treflan or Serflan. Edges should be maintained in a cleanly edged fashion.

FERTILIZATION

Trees and shrubs live outside their natural environment and should be given proper care to maintain health and vigor. Fertilizing trees and shrubs provides the plants with nutrients needed to resist insect attack, to resist drought and to grow thicker foliage. Fertilizing of new and old trees may be done in one of three ways, in either the early spring or the late fall.

1. Systemic Injection: Of new and existing trees on trees 2 inches or greater in diameter. You must be licensed to apply this method.
2. Soil Injection: A liquid fertilizer with a product such as Arbor Green or Rapid Grow injected into the soil under the drip zone of a tree or shrub. Material must be used according to manufacturers' specifications to be effective. Outside contracting is recommended.
3. Punch Bar Method: A dry fertilizer such as 10—10—10, may be used by punching holes in the drip zone of a tree 12—18" deep, two feet apart around the circumference, to the edge of the drip line. Three pounds of fertilizer should be used per diameter inch for trees with trunks six inches or more in diameter.

Fertilization of shrubs and ground cover: Use a fertilizer such as 10—10—10, broadcast over the planting

area according to the manufacturer's rate, and water in.

DISEASE AND PESTS

Trees and shrubs should be inspected bi-weekly for disease and pest problems. They should be treated with the appropriate material by a licensed applicator, only when necessary.

ANNUAL FLOWERS — GENERAL MAINTENANCE

Planting: Annual flowers can be planted any time after the last frost. Plant only when the soil is moist; water if necessary. Immediately after planting, or shortly thereafter, encourage plants to produce more stems and more flower blooms by pinching off their growing tips. Pinch just above a set of leaves.

Deadheading: Deadheading is essential if the appearance of the garden area is to be maintained at its best. Deadheading is the removal of all spent flowers from the plant. Spent flowers can be pinched off with the thumb and forefinger.

Weeding: All flower beds should be kept weed free. Weed either by hand or with a pre-emergent herbicide such as Treflan used according to manufacturer's specs.

Water: Watering is only necessary during periods of hot dry weather. Plants should receive water weekly.

Fall Cleanup: When flower production ceases or plants become unsightly, pull out the entire plant.

PERENNIAL FLOWERS, GROUNDCOVERS, AND SHRUBS — GENERAL MAINTENANCE

Weeding: All planting beds should be kept weed free. Weed either by hand or with a pre-emergent herbicide such as Treflan used according to manufacturers' specs.

Watering: Watering is only necessary during periods of hot dry weather. Plants should receive water weekly.

Fertilizer: The health of the plants can be maintained or improved, and their growth encouraged by an application of a complete fertilizer. Apply a fertilizer such as 4—12—4 as growth becomes apparent and before mulching. Apply by hand. Avoid letting the fertilizer come in contact with the foliage. Apply according to specifications.

Staking: Upright-growing perennials need support especially when in flower. Use of bamboo stakes, galvanized wire hoops or mesh will work well. Supports should be put in place before growth has become advanced and difficult to handle. The supports should reach just below the flower spikes.

Division of perennials: Two or three year old perennials are easily divided in the spring if more plants are needed. To divide, cut out entire section of plant to be divided, including roots. The larger divisions, those with three or more shoots, can be set out immediately in their permanent location, where they can be expected to bloom the same season. Smaller divisions are best planted in an out-of-the-way planting bed until the following autumn or spring when they can be moved to their permanent location.

Deadheading: As soon as early spring and summer flowers have faded, cut them back. Continue to remove all faded flowers into the fall.

Insect & Disease Control — Herbicides should be applied only as problems occur, with the proper chemical, applied only by trained personnel. Plants should be monitored weekly and treated accordingly.

Overwintering — Perennial gardens should be cleaned-up when growth ceases in the fall. Remove foliage of plants that normally die down to the ground. Divide and replant over-grown clumps.

FERTILIZER, WEED & PEST CONTROL SCHEDULE — TURF

Spring (April)	Fertilize one (1) pound of nitrogen per 1,000 square feet Pre-emergent weed grass control Broadleaf weed control
Late Spring (June)	Fertilize one (1) pound nitrogen per 1,000 square feet Pre—emergent weed grass control Broadleaf Weed Control Insect Control (if Needed)
*Sunnier (August)	Fertilize one (1) pound nitrogen per 1,000 square feet Broadleaf Weed Control (if needed) Insect Control (if needed)
Fall (September)	Fertilize one (1) pound nitrogen per 1,000 square feet (September)

LAWN MAINTENANCE TASK SCHEDULE

MARCH (weather permitting)

- Clean up all winter debris, sand, leaves, trash etc.
- Re-edge mulch beds, maintain at 2"-3" maximum
- Fertilize plants
- Aerate and thatch turf (conditions permitting)

APRIL

- Reseed or sod all areas needing attention
- Fertilize and weed control
- Lime
- Start mowing when grass reaches 2½", mow to 2"

MAY

- Mow turf at 2"-2½"
- Weed as necessary
- Activate irrigation system, water only when necessary
- Check for disease and pest problems in both turf and plants
- Apply lime, if indicated by soil test

JUNE

- Mow turf at 2-3"
- Fertilize and weed control
- Monitor irrigation
- Weed
- Check for disease and pest problems in both turf and plants, treat as necessary.

JULY — AUGUST

- Mow turf at 3"
- Fertilize (early August)
- Check for disease pest and weed problems. Treat as necessary
- Monitor irrigation
- Prune shrubs

SEPTEMBER

- Mow turf 2½" - 3"
- Monitor irrigation (can be cut back; do not over water)
- Check for disease problems. Treat as necessary

OCTOBER

- Mow turf 2" – 2½"
- Shut down irrigation
- Fertilize
- Clean-up

NOVEMBER

- Apply lime if indicated by soil test
- Final mowing at 2 inches
- Thatch lawn areas if needed
- Prune and fertilize trees and shrubs.

Final cleanup

DECEMBER, JANUARY & FEBRUARY

Repair, rebuild, and service all equipment
Develop schedule, order lawn supplies
Prune trees as needed

WATER MANAGEMENT

In lieu of an automated irrigation system, the best means of managing water for the site is to mimic its delivery manually as closely as possible as it would be delivered automatically. Water management of plantings and lawns will consist of two phases: The first phase will be while plants and lawns are germinating and getting acclimatized to their new surroundings. The second phase will be once plants and lawns have established themselves in their new microclimate habitat.

Lawns

Phase One- Germination

A proprietary blend of fescues is proposed for lawns of the Devens Public Safety project. This blend will require less frequent watering, mowing, and weed control for germination, and once fully established, will require only several mowings a season and will tolerate drought much better than the typical blend of grasses. It will not tolerate foot traffic like a bluegrass blend will, but the lawn areas surrounding this project should not require it to. It will take two to three weeks to germinate (as opposed to seven to ten days for ryegrass). It must be watered every other day for two months, and then watering can taper off as this fescue blend begins to get established.

Phase Two- Established Lawn

Once fully established (perhaps two to three months), it should only need water during times of extreme heat or drought, during which it should receive at least two inches per week, preferably with one or two deep soakings.

Plantings

Trees, shrubs, vines, and ground covers will have the same dual requirements for water: more during the germination and acclimatization phase, and less after establishment.

Phase One- Germination

Although all of the plants proposed for this project are considered drought-tolerant in New England, newly planted specimens will have confined root systems and must receive water regularly until they have been fully established. The frequency and duration of watering will be determined by time of year, species, type, soil type, and temperature.

Phase Two- Established Plantings

Drought-tolerant plants are considered those which can be expected to survive in the climate in which they are planted after their root systems have grown widely and deeply enough that they can be expected to survive and thrive in their transplanted environment under normal conditions. Extreme drought and heat are not considered normal conditions, and during such times, supplemental water may be necessary to overcome seasonal extremes.