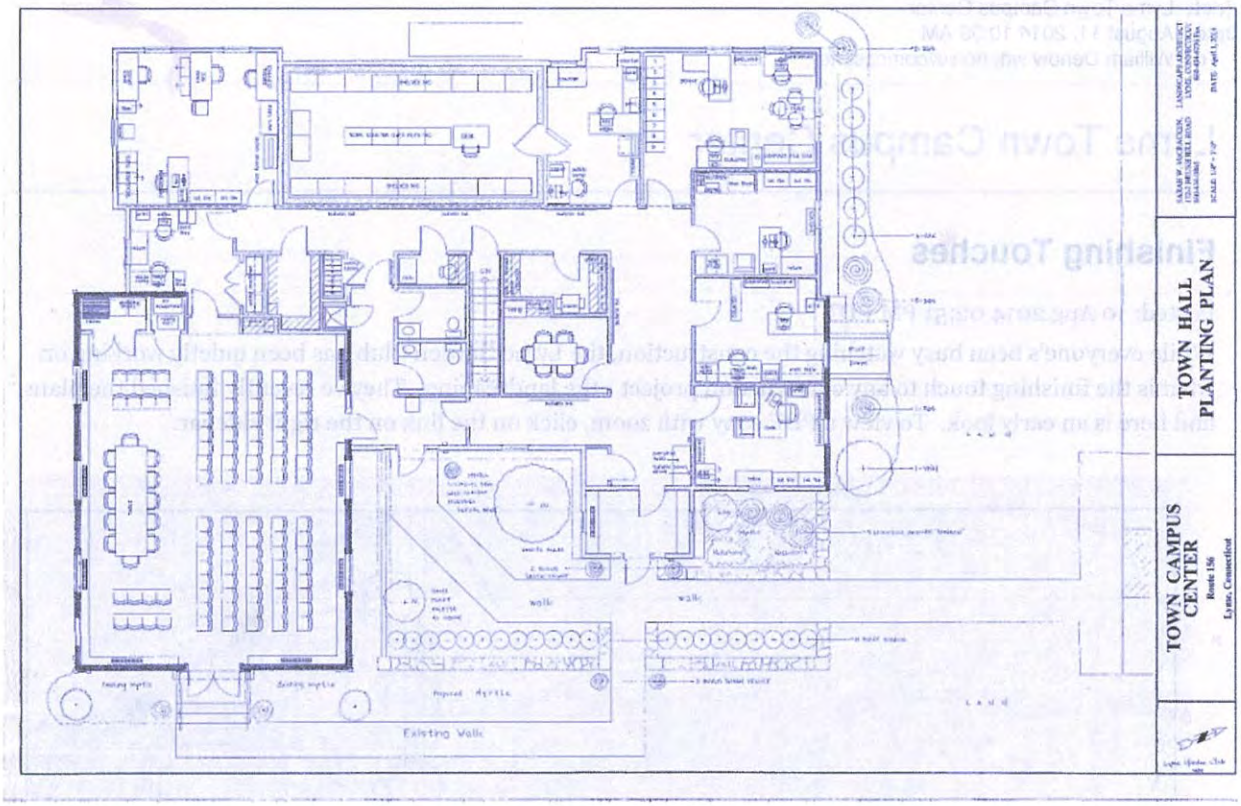
LANDSCAPE MAINTENANCE MANUAL

A Work in Progress

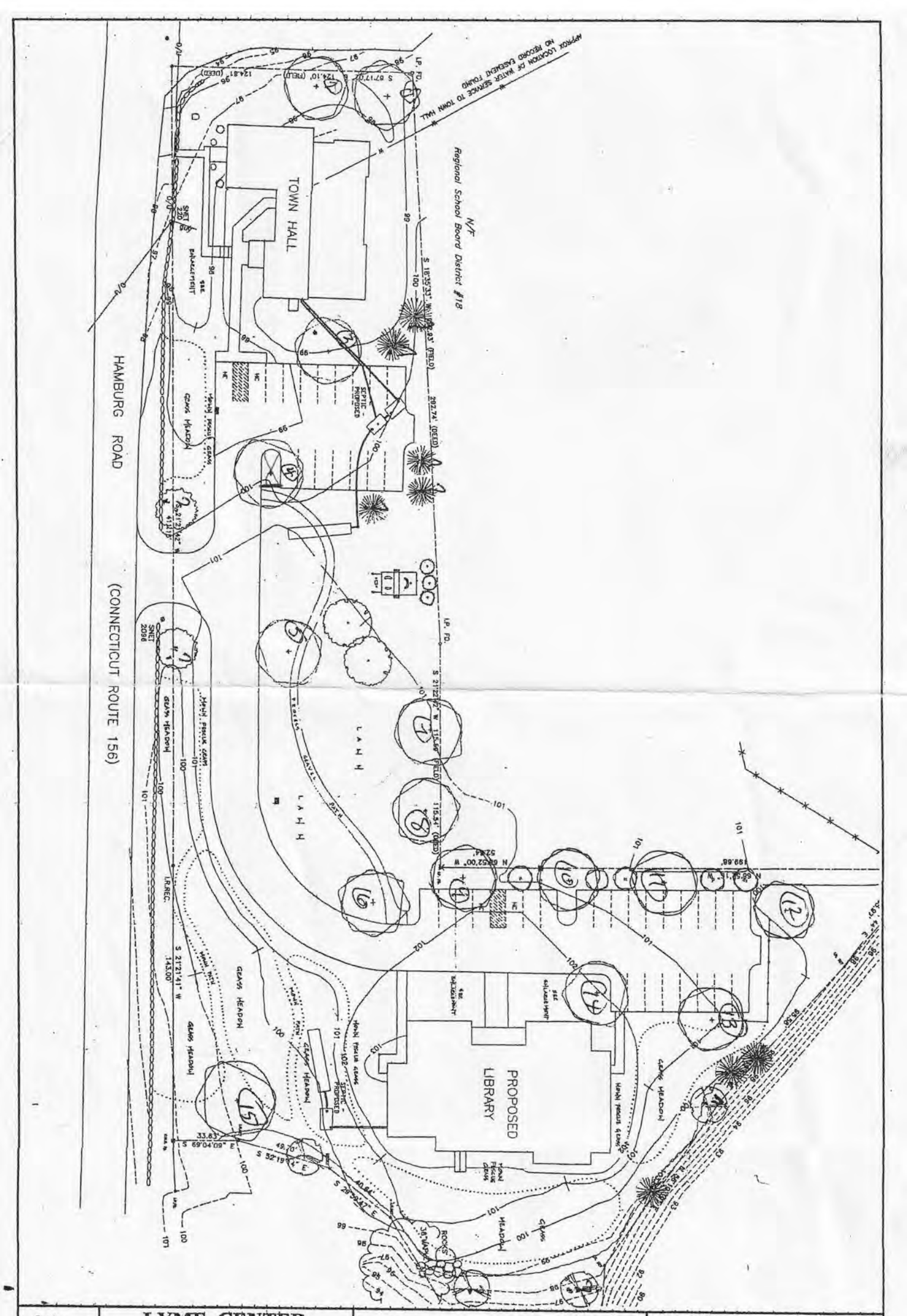
for

LYME TOWN CAMPUS

Prepared By:
SARAH WOOD MC CRACKEN, Landscape Architect
172-2 Brush Hill Road
Lyme, Connecticut 06371
860-434-0865



The design was done by Lyme resident and landscape architect, Sarah McCracken, so it fits Lyme's style. It is simple but elegant. Grassy meadows that don't need to be mowed and hardy plants keep maintenance to a minimum. And of course, the plants are deer resistant.



LYME CENTER CAMPUS

Route 156 Lyme, Connecticut

SITE DEVELOPMENT

PLANTING PLAN

SARAH W. McCRACKEN, LANDSCAPE ARCHITECT
172-2 BRUSH HILL ROAD LYME, CONNECTICUT
860-434-0865 860-434-6236 Fax

SCALE: 1" = 20'-0"

DATE: January 27, 2014
July 3, 2014

LANDSCAPE MAINTENANCE MANUAL

For the

LYME TOWN CAMPUS

TABLE of CONTENTS

Prepared and Copyright by
Sarah Wood McCracken, Landscape Architect
October 4th, 2016

LANDSCAPE MAINTENANCE MANUAL

For

LYME CAMPUS CENTER AND THE LYME GARDEN CLUB

Prepared By:

SARAH W. Mc CRACKEN, Landscape Architect

172-2 Brush Hill Road

Lyme, Connecticut 06371

860-434-0865

April 1, 2016

Copyright 2016 SWMLA

LANDSCAPE MAINTENANCE MANUAL

For

LYME CAMPUS CENTER AND THE LYME GARDEN CLUB

Prepared By:

SARAH W. MC CRACKEN, Landscape Architect

172-2 Brush Hill Road

Lyme, Connecticut 06371

860-434-0865

April 1, 2016

INTRODUCTION

The long-term success of any landscape is highly dependent on the care and maintenance that the project receives. The objectives of the landscape maintenance program described herein are to present a landscape that preserves in manner and proportion the effect intended by the Landscape Architect in the original and subsequent landscape design. Implicit to that goal is a standard of optimum health, including the continued growth and flourishing of all ornamental landscape plants.

This Landscape Maintenance Manual was prepared by Sarah W. McCracken, Landscape Architect to provide landscape care and maintenance directives for the Town of Lyme, Connecticut and The Lyme Garden Club, caretakers for the gardens at the Lyme Town Campus. The manual will enable the owners to provide a clearly defined maintenance program to the Lyme Garden Club that will set standards for a consistently maintained landscape and prevent irregularities in the overall standard of care. In this instance the Lyme Garden Club will maintain the landscape themselves and this manual will provide the framework for understanding the specific needs of each plant and the general needs of the types of plants included on the town property.

These guidelines are meant to be both specific and general. Follow specific directions where given. There are also general recommendations that are intended to educate and guide both owners and maintenance personnel. No guideline or manual, however, could anticipate every problem that might occur or develop over time. Site-specific problems should be diagnosed and remedied before they become detrimental to the overall appearance or long-term health of the project or the safety of its users. For more information about landscape maintenance issues refer to any of the books listed in the Bibliography.

NOFA Standards for Organic Land Care

A. To work with natural systems rather than seeking to dominate them

B. To encourage and enhance biological cycles involving microorganisms, soil flora and fauna, plants, and animals

C. To maintain and increase the long-term health of soils

D. To use renewable resources from local suppliers

E. To work as much as possible within a closed system with regard to organic matter and nutrient elements

F. To avoid pollution in the establishment and care of landscapes

G. To protect the diversity of the land and its surroundings, including protecting native plant and wildlife habitats

DESIGN INTENT

The current landscape architectural character of the Lyme Town Campus is a unified composition of three elements: Lyme Library, Lyme Town Hall and the Town Green that will be situated between the two buildings when developed in the near future. An emphasis was placed on using several evergreen species at both buildings that unify the overall plant design. Hellebores, a perennial that blooms in either late fall to winter or early spring are placed at the entrances to both buildings and provide for color and cheer in the winter and also unify the overall plant design. Two other deciduous shrubs, both witchhazels, but different varieties, are planted near the entrances or windows of the buildings for viewing in the winter time.

In general, trees, including white and red oaks, red and sugar maples, plus one tupelo and two amelanchiers (also known as shadblow) are spaced along the edges of the property and within the eventual Town Green area. All the trees should be encouraged to attain mature height and reach their natural full spread. Ornamental and understory trees (Amelanchier, Cercis canadensis) should be encouraged to maintain their species-characteristic branching structure and a full canopy reach. Profuse blooming should be encouraged in all flowering ornamentals.

Evergreen shrubs, both coniferous and broad-leaved (Ilex glabra, two species of boxwood, leucothoe, skimmia japonica and dwarf white pine) should be encouraged to reach their mature height and spread and to provide good winter presence.

Flowering deciduous shrubs (aronias, viburnums, clethra, butterfly bush, hamamelis) should be kept full and green while in leaf, and provide abundant color when in flower. They should be kept maintained at a reasonable size (in an informal way) to maintain the original design intent. NO DECIDUOUS ORNAMENTALS SHOULD BE SHEARED.

Groundcover plantings of myrtle should form neat dense mats, lush with foliage and flowers to cover the soil surfaces. Plantings in the entries of both buildings were chosen mainly for their winter characteristics, but should also provide interest in different seasons.

The two herb gardens in front of the library are reminiscent of an herb garden alongside the original Library that was demolished to make room for the current library. Several herbs were salvaged and are used in the current herb bed.

All plantings should be kept free of invading weeds and pests.

SOIL MANAGEMENT

Effective landscape maintenance programs result in part through scientific soil management. This manual suggests a holistic approach to maintenance by encouraging nourishing the soil rather than feeding the plants.

Healthy soil is free of crusting, compaction, pesticides and other toxins, salt build-up and excessive erosion. Healthy soils are also teeming with microflora and microfauna – the fungi and bacteria that break down soil particles into usable nutrients. In healthy natural systems, organic matter cycles in place through root, stem and leaf decay. The decay is accomplished by microbial activity within the soil/plant community. In an organically maintained landscape, the soil/plant community retains and recycles organic matter also. The soil is "fed" natural materials such as compost or shredded leaves that affects the structure of the soil and the nutrient availability.

The object of organic maintenance of landscapes is to create healthy soils with high humus content, which are the best growing media for plants. Soils with high humus content create healthy environments and the microbial organisms in the humus fight plant diseases and pathogens. Air in the soil is also critical to healthy plants. High humus soils have lots of air pockets creating large pore spaces. Healthy soils with high humus content act like a sponge to hold water in these air pockets for slow release to plants.

Organic matter in the soil helps free nutrients from the minerals in the soil so that they are usable by plants. As plant and animal matter decays, it forms humus. Microbial fungi and bacteria break down the organic matter into fertilizer for plants – similar to a slow-release fertilizer.

Supplemental organic soil amendments may be necessary to balance the soil's chemistry (pH), stimulate its biology and restore its physical composition which should be 25% air, 25% water, 45% minerals and 5% organic matter.

Proper pH is vital to plants. Soil pH affects soil organisms, nutrient leaching, nutrient availability, toxic elements and soil structure. A neutral pH indicates that microorganisms and worms are thriving and breaking down organic matter into plant food. Soils in Connecticut are commonly acidic (with a pH of 5.5 to 6.5). Ideally, soil pH is best for plants in the 5.8 to 6.9 range, but some plants prefer a more acid or a more alkaline soil. (Check Plant Identification Sheets for more information.)

Every three years, test the soil pH and fertility in representative areas (lawn, shrub border, perennial bed, herb gardens and tree pits) to determine whether they fall within the ranges of acceptability. Keep records of the tests in the Maintenance Schedule sheets of this manual and treat areas that do not have acceptable results. Keep records of the treatment also in this manual.

A soil test will determine the soil's pH and fertility. Kits are available from the state Agricultural Experiment Stations for a cost of $5 each and they contain instructions for taking samples and returning the samples to the state lab. Soil tests should be done in cool weather in the Spring. If you have several different growing situations (woodland, prepared bed, herb gardens and lawn, etc) you will want to take samples from each area. Soil management procedures and application rates of pH adjusters and fertilizers are dependent on the results of these soil tests.

Treatment to lower pH: use wettable granular sulfur following the recommended application rates on the package. Perform amending in cool weather (less than 60 degrees). Thoroughly incorporate into the top 6" of soil during application.

Treatment to raise pH: use either ground limestone (calcium carbonate) or dolomite (a variable mix of calcium carbonate and magnesium carbonate). Do not use hydrated lime. Follow application rates on package.

COMPOSTING

Compost is the most critical element in reducing the amount of labor (and money) required in establishing a healthy soil environment for plants. The advantages of using compost as a fertilizer and soil amendment are: it improves soil structure; it reduces soil compaction and runoff; it enhances biodiversity; it increases water and nutrient retention; it helps suppress and prevent plant diseases, especially if compost is local; it detoxifies certain pesticides; it kills potential human pathogens; it improves plant establishment and root growth; and it reduces the need for fertilizers, pesticides and irrigation. (Your new plantings done by Burnett's Landscaping, Novak Brothers, Dutka Landscaping and Lyme Garden Club volunteers have been planted in a topsoil/compost mixture, which should be sufficient for fertilizer for one year or more.)

Compost is defined as organic matter that has undergone the decaying process, which is done by microorganisms in the compost pile. They consume material for their own use and also convert proteins into nitrogen, phosphorous and potassium as well as other materials required by plants.

This manual suggests composting organic material on site, although compost can be purchased in bags and in bulk from garden centers. A compost pile can be either enclosed or open and freestanding.

To have a healthy compost pile you must provide a proper environment for microorganisms to flourish. It should be located where it gets at least half a day's sun so that the internal temperature of the pile is 150 degrees and also where it will not be subject to runoff. It should have enough water content without becoming saturated. Normally, the green material will provide enough moisture, but during drought it will require some supplemental water. And, it should have the proper blend of organic materials, proteins and carbohydrates. Proteins are provided by nitrogen sources such as green leaves, grass clippings and kitchen waste. Carbohydrates are provided by carbon sources such as woody matter like sawdust, paper and dry leaves. The optimum carbon to nitrogen ratio is 25:1.

An ideal initial mixture consists of 25% decomposed animal manure, 50% green material (household waste, grass clippings, green leaves and weeds) and 25% woody materials (wood chips, bark, sawdust, shredded paper and dry leaves). These should be layered and watered and left for at least two weeks. Thereafter, the pile can be turned once a week and added to whenever the materials are available.

If your compost pile should develop an ammonia smell it means that there is too much protein or green material. The solution is to add shredded paper (newspaper that does not have color ink is ideal and easy.) If it develops a sour smell it is an indication of a lack of aeration. Turning the pile more often will control this problem. Do NOT add weeds that have gone to seed, meat, fish, domestic animal manure, diseased or infested plant parts, twigs, rose stems or other large woody stems. The pile can be covered with a tarpaulin

during periods of rain to prevent excess water from leaching nutrients down through the pile and lowering the temperature.

Compost is the ideal fertilizer as well as soil amendment. Compost can be added as a fertilizer three times a year to most plants: in spring three to four weeks before the growing season begins; in summer during active growth; and in the fall. However, be sure that compost is thoroughly decomposed before putting it in your garden beds. You can tell whether your compost is ready to use by placing about two cups into a plastic bag and sealing the bag. Leave it overnight, and if the bag has expanded the compost is not yet fully decomposed.

Soil without sufficient organic matter (compost) will not have the adequate air pockets to allow air and water to move through the soil and deliver nutrients to the plants. If organic matter is never added, soil can become depleted of nutrients and its physical structure will deteriorate. To retain good soil structure, regular addition of compost as both fertilizer and mulch will reduce compaction and maintain healthy soil.

FERTILIZING

Fertile soil within an optimum pH range encourages plant health. There are three primary nutrients required by plants, along with a number of other trace elements. These primary elements are nitrogen,(N), phosphorous (P) and potassium (K). Although this manual suggests fertility testing of only the three primary nutrients, plants also require calcium, sulfur and magnesium in fairly large amounts. Plants also require micronutrients including iron, copper, manganese, boron, chlorine, zinc and molybdenum in trace amounts.

As mentioned before, the object of holistic landscape management is to feed the soil to benefit the plants, not artificially stimulate plant growth. Unnecessary applications of any fertilizer or soil amendment can cause mineral nutrients to build up to excess levels in the soil, which can lead to run-off and pollution of local waters. By using natural on-site compost, shredded leaves and natural mulches the need for external fertilizer input is minimized.

Decomposed organic matter (compost) can provide nearly all of the essential nutrients for plant growth. Use of the organic approach to fertilizing can reduce the reliance on commercial fertilizers. When supplemental fertilizing is necessary as indicated by soil tests, use of organic commercial fertilizers is recommended.

Fertilizing Trees: Fertilize trees once annually in the early spring (April or May) and no later than June 15 with compost or a low nitrogen, high phosphorous fertilizer, unless soil test recommendations suggest otherwise. Fertilizer should be broadcast around the base of the tree and out to the dripline of smaller trees and lightly worked into the soil. Water thoroughly within one hour of fertilizing.

Fertilizing Shrubs: Apply compost or a slow-release organic fertilizer that is appropriate for the plant (see Plant Identification Sheets). Fertilizer shall be applied as directed in the product instructions and lightly worked into the soil. Water thoroughly within one hour of fertilizing plants.

Fertilizing Perennials: Perform fertilization of all perennials according to their individual requirements, or as specified below. Prepare beds by removing weeds and moistening soil prior to fertilization. Evenly apply compost or organic fertilizer to the soil around the base of each plant and at least 8" beyond the drip-line of the mature plant. Incorporate into the soil without damaging shallow roots. Avoid getting fertilizer on old or emerging foliage. Generally fertilize twice per year, once in spring after active growth has begun and once again lightly in early summer when soil moisture conditions are optimal and dry weather conditions are not anticipated. Water thoroughly and maintain optimal soil moisture following feeding. Do NOT feed in early fall. See Plant Identification Sheets for more specific information.

Fertilizing Ferns and Ornamental Grasses: As ferns and ornamental grasses do not require a lot of feeding, fertilize only once per year very lightly in early spring with compost or a general-purpose balanced fertilizer.

Fertilizing Groundcovers: Prepare beds by removing weeds and foreign matter and moisten soil before fertilization. Feed in early spring with compost or a specified fertilizer when soil moisture conditions are optimal and dry weather conditions are not anticipated. Apply evenly and incorporate into the soil being careful not to damage roots. Water thoroughly and maintain optimal soil moisture following feeding. Do NOT fertilize in the Fall.

Bulbs: Fertilize once a month during blooming period with a low-nitrogen fertilizer such as a specialized bulb food, 6-24-24 or 5-20-20 and also immediately after flowering. Follow manufacturer's directions regarding application rates for each type of bulb.

Based on annual soil tests, the fertilization program is subject to modification over time. A pH adjustment, if required, shall be made by the necessary addition of pulverized limestone or aluminum sulfate to the mix.

Many plants in this Maintenance Manual require a general balanced fertilizer. Compost should be your first choice. But there are many fertilizers that meet the specifications of being a general balanced fertilizer. However, I recommend that only organic fertilizers be used. Some easily obtainable brands are Gardentone and Planttone by Espoma. Others with balanced levels of nitrogen, phosphorous and potassium are acceptable substitutes.

MULCHING

Mulch is defined as an organic or inorganic material placed on top of the soil for functional and/or aesthetic purposes. Mulches mimic natural conditions by adding organic matter with humus and natural fertilizers to the soil; providing an environment for beneficial microorganisms; retaining moisture; controlling erosion; moderating soil temperature fluctuations and aiding weed suppression.

This manual recommends organic mulches except in special circumstances. Organic mulches break down because of the microorganisms in the soil, thereby releasing nutrients for the plants. Do not use a very fine textured material such as peat moss because it tends to mat and retard the flow of water and air to the soil beneath. Materials such as fresh wood chips and saw dust should be avoided because they use nitrogen from the soil in the decomposition process, thereby reducing the amount of nitrogen available for the plants.

Shredded bark, pine needles and fully decomposed compost are the best choices because they allow water and air movement and do not become matted down or blown away in high winds.

The landscape contractor and Lyme Garden Club volunteers, before project completion, applied a layer of mulch to all shrub beds, tree saucers and other planting beds. Thereafter, a fresh layer of mulch should be added to each area in the spring after leaf removal to maintain the specified depths of mulch. Mulch can be delivered by landscape contractors and garden centers. It should be at least one year old. Be sure to ask for dark brown color when ordering.

Specified depths are two inches for trees and shrubs and one inch for perennials and groundcovers. Mulch for the herb gardens is one-half inch thickness of buckwheat hulls. In the fall, mulch thickness should be reviewed to see whether it is adequate for the winter. Add mulch as required to meet specified thickness for specific plant types.

Do NOT overmulch. Too much mulch suffocates life in the soil and starves roots. Keep mulch away from trunks of trees and shrubs and basal foliage of perennials and groundcovers. Mulch piled up in this way can cause bark and stems to rot. Excess amounts of mulch also provide herbivores such as moles and voles a good medium through which to tunnel and feed on the bases of plants. If plant roots grow into the mulch layer, it is an indication that the mulch is too thick and needs to be reduced.

Mulch for winter protection of ornamental grasses, herbs and heathers and heaths shall be evergreen boughs. If you use a live cut Christmas tree, the branches can be cut for use as winter protection after the holidays.

WATER MANAGEMENT

Intelligent water management constitutes a very important aspect of landscape maintenance, and its poor management is frequently the cause of plant losses. See specific watering recommendations for each plant in Plant Identification Sheets.

Water requirements of different plants vary from species to species. For example, large-leafed and thin-leafed plants usually require more water than plants with small or thick leaves. Similarly, young plants with tender shoots generally require more water than older plants.

Plants in shade require less moisture than those in full sun because they do not transpire as rapidly. Similarly, overcast and cool moist weather necessitates less watering of the plant material than sunny, hot dry weather. Mulch can help to retain moisture in the soil, as it shades and cools the soil surface. However, once mulch dries out, it can act as a water repellent surface, hindering the penetration of water into the soil. Therefore, test the moisture of the planting bed itself rather than the mulch to determine the efficiency of the watering practices.

In the Northeast, rainwater can provide for the water requirements of most plants most of the time. If the soil is properly prepared and maintained in a healthy way, rain will soak into the soil and will be taken up by plants over time and runoff will be minimized. If 1rain does not provide at least one inch of water per week, then supplemental watering will be needed.

To provide the necessary watering to ensure the success of all plantings you will need to provide enough water to penetrate the root systems of the plants on a frequent enough basis to avoid any moisture related stress (usually once a week during the growing season). It is best to water deeply once a week than to water a little bit several times a week.

Apply water in a slow uniform pattern that facilitates a complete saturation of the soil from the surface to a depth of 12 to 18 inches without being waterlogged. Do not allow plants to reach their permanent wilting point as they will not recover even when watered. In the shade, do not spray leaves of plants with water if possible to avoid mildew and fungus. Avoid letting the water run off the garden beds.

Monitor the application of water to prevent too-dry or too-wet conditions from occurring. See specific requirements of individual plants in the Plant Identification Sheets.

Watering Trees: For the first two years, while trees are becoming established, watering is critical. It is best to water deeply once a week during the growing season when there is not a soaking rain. Frequent light sprinklings cause roots to grow at the surface of the ground seeking the water. This practice makes the trees particularly susceptible to damage by droughts. Evergreen trees in particular should be

watered throughout the winter if the weather is dry. Drip irrigation by soaker hoses and hand application from a hose are the preferred methods because water soaks in more thoroughly while allowing for less evaporation and runoff. It also keeps water off the leaves, thereby reducing the possibility of disease that is more prevalent when leaves are wet. To reduce evaporation, water in the early morning. Watering of trees after they have become established is necessary only during drought, but careful monitoring of the soil in the trees' root zones is critical to determining whether the tree needs water.

Watering Shrubs: Shrubs are more dependent on watering over the long term than trees. They can be watered by either drip irrigation, hand hose watering or overhead sprinkler methods. Once again, the best time to water is early morning before the sun's heat intensifies and water droplets can cause foliage burn. Shrubs require one inch of water per week. To measure that amount, place shallow cans out among the shrubs under the irrigation spray and when they fill with one inch of water turn the irrigation off. The length of time is the required time per watering each week that will be optimum for shrubs.

Watering Groundcovers, perennials and annuals: Fleshy plants such as perennials, groundcovers and annuals require substantial watering for growth and flower production. Overhead sprinklers are the most practical means to water them. It is important to water in the early morning to avoid the problems associated with wet leaves. An adequate layer of mulch will significantly reduce the amount of water required. However, the mulch should not be allowed to dry out so much that it cakes, thus presenting an impermeable barrier to water.

WEED CONTROL

A weed has been defined as any plant out of place. It is important to distinguish garden weeds from invasive species.

The best method of weed control is prevention. Mulching is the single most important method to prevent growth of weeds in the first place. Another method of prevention is to avoid conditions that favor weeds such as compacted soil, overwatering and excessive nitrogen.

Vinegar or salt can be used to eradicate weeds in the cracks of walks or terraces.

Once weeds have sprouted, it is also helpful to time weeding when the plants are small rather than after they have grown, flowered and seeded themselves all over the garden!

Hand pulling of weeds is recommended for all areas, especially around shallow rooted plants and for all groundcover areas. Hand weed when soil is moist to facilitate weeding. Weeds that have not gone to seed can be added to the compost pile.

Hand weeding is made easier and more productive by using a tool, such as a gardener's knife or a slender trowel to gently lift the weed from one side and use your hands to actually remove the weeds from the opposite side. If it is a weed that does not produce prolific seeds you can pull out the weed any time. But, if it does produce many seeds, you will want to be careful removing them.

Dampening the soil before pulling helps in removing all of the root system, which is important as some invasive plants can regenerate from any root parts still left in the soil. The advantages of pulling weeds include its small ecological impact, minimal damage to neighboring plants, and low to no cost for equipment or supplies.

It is important to learn to identify common invasive species, especially on a site adjacent to woodlands or old fields. Always clean tools used in removing the invasive species after each use. Regardless of location of invasive species, weeding is best done before the invasive plant sets seed. If the plant has already set seed, the plants should be deposited into a plastic bag and disposed of in the trash.

PRUNING

See Plant Identification Sheets for any specific instructions regarding pruning of specific species.

Pruning Objectives: Prior to pruning, determine the natural form of the plant, examine the intentional function of its placement and make cuts to accentuate these characteristics. Always prune with a specific purpose, such as the following:

A. To maintain the intended scale, proportion, effect or natural character of the planting within its environment.

B. To correct structural defects by removal of crossed or rubbing branches or weak narrow-angled branches.

C. To improve the health of the plant by removing dead wood, infested, broken or diseased branches, all sucker growth and girdling roots.

D. To remove weak stem structure, double crotches and forked trunks that are susceptible to storm damage.

E. To stimulate growth and fill out a leggy plant by pruning back long shoots to the point where new growth is desired.

F. To improve success at transplanting by root pruning and removing broken roots and damaged limbs prior to transplant.

G. To maintain intended form by removing watersprouts from trunks and cutting vigorous suckers from the bases of plants, especially grafted or budded plants.

H. To rejuvenate old shrubs and encourage new leafing and branching in sparsely foliated plants by heading back or thinning.

I. To allow light into and maintain the function of hedges, screens and windbreaks by making selective cuts.

J. To increase flower or fruit production – specific by plant type.

K. To encourage profuse bloom by pinching off faded flowers and seedpods.

L. To make tree forms from overgrown shrubs by limbing up lower branches and thinning crown.

Correct pruning stimulates a plant to perform at its best which is the natural response to the simulation of pruning cuts. It is best to begin pruning plants when they are young to start the process of correcting structural defects, maintaining proportion and natural character of the plants and to keep them healthy.

The optimum time to prune living wood is when the plant's energy reserves are high. For most plants, this is in late winter before the growth buds begin to swell. However, the timing is ultimately dependent on the individual plant's growth cycle and flowering time. Generally, Spring-flowering trees and shrubs should be pruned after they bloom because they bloom on "old" wood (last year's growth). Summer and fall bloomers should be pruned in the winter (February/March) before the buds begin to swell because they tend to bloom on "current" wood (this year's growth). Evergreens with no flowers or indistinct flowers should be pruned in late winter before growth commences. See Maintenance Schedule and the Plant Identification Sheets for more specific information.

Plants shall be pruned only when temperatures are above 40 degrees F. Pruning at the end of the growing season may encourage new growth that may not harden off to withstand the winter weather conditions. Do not prune when foliage is wet to avoid entry of water-borne organisms.

Before pruning, examine each plant to see how much needs to be removed, how much is diseased, what limbs are needed to maintain the natural shape of the plant and which branches pose a danger to people, property or to the plant itself. Always prune to a plant's natural shape except when pruning clipped hedges or topiary.

Make all cuts with clean, sharp tools. Disinfect tools with 70% denatured alcohol after each cut on diseased plants. Remove sap or resin with alcohol or other safe solvents.

Always cut just above the joint of a leaf or side branch where new growth will quickly develop. Never leave any stubs and never peel or smash bark because these practices leave entry points for disease and insect attack. Do not cut on a slant; do not cut too close to the bud or too far from it. Do not tip prune or "top" a plant as this practice leads to weak plants. A plant's energy is stored in its leaves, tips and buds and should be preserved as much as practicable. Do not use tree paint on cuts as current research indicates that painting wounds does not stop decay.

Pruning ornamental trees: Prune lightly to encourage flower production. For spring-flowering ornamental trees, prune, if required, immediately after the blossoms have faded. Trees that bloom in early summer should be pruned in fall or winter. Trees that flower in the fall can be pruned in winter or early spring before growth starts. Susceptible ornamental trees that are infested with fireblight should be pruned in winter to avoid spreading the disease during the active season.

Thin ornamentals in the crown so that wind blows through the structure of the tree, but not so much that sun enters the center of the tree, where it can damage bark and encourage watersprouts or suckers. Emphasize the form of the tree with pruning operations. Consult Plant Identification Sheets.

Pruning Shrubs: Perform pruning of all shrubs at least once annually at the optimum time of the year for each species or whenever a problem develops that requires a pruning remedy. Inspect shrubs on a regular basis for structural damage. Time pruning operations to encourage bloom (See above). See Plant Identification Sheets for specific information for each species. See Appendices for specific plant pruning techniques.

Many flowering deciduous shrubs sucker profusely. Remove suckers as they appear. Do not attempt to remove all at once a large number of suckers that have established themselves over a long number of years. Instead, break the process into a number of operations over a period of two or more years depending on the size of the shrub.

When removing a large number of damaged branches from a shrub, remove only that which has been damaged. Do not immediately attempt to reshape the shrub. Allow it to recover for six months before it is pruned for aesthetic reasons. When removing diseased branches, cut at least 3 inches below the apparent area of infection.

Many multi-stemmed deciduous shrubs benefit by removing annually up to one-third of the old wood to ground level to promote new growth and maintain size. Do not remove more than one-third of the old wood or the plant may not recover quickly. See Plant Identification Sheets for specific plants to which this method applies.

Single-stem and grafted shrubs benefit from thinning. This practice removes entire stems, limbs or branches from the shrub, opening up and simplifying the structure of the plant. It encourages growth, prevents wind or snow damage, and revitalizes the plant. See Plant Identification Sheets for specific plants to which this method applies.

Practice "heading back" to shape the future growth pattern of a shrub by cutting down to promising side branches or to lateral buds that will grow in the direction wanted. Heading back reduces size, encourages fullness and growth, prevents wind or snow damage, and revitalizes the plant. See Plant Identification Sheets for specific plants to which this method applies.

Rejuvenation pruning is the complete cutting of all stems to 4 to 6 inches above ground level. This is done in late winter or early spring to certain twiggy multi-stemmed shrubs only. Never cut off at a horizontal line several feet above the ground. See Plant Identification Sheets.

Pruning Groundcovers: Prune out dead wood in early spring. Prune to remove infested, damaged, dead or dying material. Hand prune (do not shear unless otherwise instructed) "browned out" foliage and dead branches in early spring when it becomes apparent that the branches are not alive.

Thin once a year at the start of the season to prevent a building up of non-leafing branches below the leaf canopy. Snip and remove awkward or long straggling branches, and prune to balance growth and maintain a uniform height by making individual cuts.

Edge groundcovers as necessary to keep within bounds unless overhang is the intended aesthetic effect. See Plant Identification Sheets.

Pruning Perennials and Ornamental Grasses: Remove any yellow or brown leaves from herbaceous perennials as they appear.

Trim off flower stalks of flowering perennials after the flowers have faded, unless otherwise noted in the Plant Identification Sheets. "Deadhead" on a weekly basis to encourage maximum bloom. Do not allow seed heads to form unless otherwise noted.

Trim foliage to the ground after the first killing frost when foliage turns yellow or brown, unless otherwise noted in the Plant Identification Sheets. If foliage is specified to remain until spring, cut back to the ground any foliage and seed heads remaining on the plants in early spring.

If specified on Plant Identification Sheets perform pinching on perennials before flower buds form. Pinch back tips to remove new growth by removing terminal buds before they elongate into stems. Pinching makes young plants fuller and encourages more branching and flower heads to form.

Remove any fern fronds that have yellowed and died. Unless specified to retain foliage through winter, trim perennial ferns after first killing frost. If foliage of perennial fern is to be left on plant through the winter, promptly remove stalks in early spring.

Allow foliage and flower stalks of ornamental grasses to remain on the plants over the winter. Cut foliage and dried flower stalks back to 4 to 6 inches in late winter or early spring before new growth emerges.

Bulb pruning: Regularly remove blossoms that have faded. Do not remove foliage from bulbs until it is completely brown. Then, if the foliage does not separate from the bulb with a gentle tug, neatly trim at ground level. Bulb foliage may be tucked under the leaves of perennials or groundcover while it is still green if desired.

PEST MANAGEMENT

The best pest management is to grow healthy plants. One way to control populations of harmful insects is to keep a garden clean, cleared of weed overgrowth and litter. It is also important to realize that not all pest outbreaks are harmful to the long-term survival of the plant. Oftentimes, the pest can be eliminated by its natural enemies without human intervention.

Regular monitoring of plant health is the second most important pest management practice. Maintaining a healthy garden is possible if the gardener learns to identify symptoms so proper precautions can be taken or proper treatment given. It is not recommended that a garden be sprayed all over in the hope of controlling or eradicating all insects. To treat the entire garden with insecticides also destroys beneficial insects that help pollinate flowers and balance other insect populations, such as the ladybug beetle and praying mantis.

Essential to the control process is correct diagnosis. Examine plants weekly for pest control purposes, by looking at both sides of the leaves and stems. Look for eggs as well as insects. Immediately identify problems or bring a sample of the pest or problem to a reliable garden center (or contact the local Department of Agriculture agent) and request help identifying and determining treatment of the problem or condition.

Physical removal of larger pests can be the least damaging to the environment and the most effective. Proper disposal of dead pests and infected plant parts is important.

If spraying is required, perform spraying operations in early morning. Do not spray in windy conditions. Exercise care when using dormant oils to minimize overspray to buildings or windows. In general, apply pesticides in cool weather (less than 85 degrees Fahrenheit), during the cooler part of the day, and if possible when plants are protected by shade and not in direct sun. Water plants one to two days before applying pesticides so that plants will not be under moisture stress.

Disease control is a matter of prevention, eradication and protection. The preferred prevention practice includes building a healthy soil rich in organic matter with balanced nutrients, correct pH, and trace elements. Potassium is especially important in making plants resistant to disease. Also important is to practice cleanliness, such as removal of leaf drop, pruned branches and grass clippings.

Prompt detection and identification of diseases helps to prevent the spread of disease. A thorough inspection of all plants should be done at least twice monthly. Promptly prune and remove infested branches to prevent the spread of infection. Keep in mind that fungi usually extend well beyond the zone of decay.

To avoid spreading disease, disinfect pruning tools and equipment after every pruning operation and in between cuts if they have been used on diseased plants. Sanitize tools in 70% denatured alcohol.

Spraying with fungicide is an effective preventative measure against the spread of disease. Most fungicides are not eradicants. Apply protective fungicide sprays during dry weather to prevent rainwater from washing the material off of the plant. Fungi and bacteria penetrate plant tissues when the plants are wet. Apply spray in a fine mist in order to completely cover the plant with an even protective film. Read labels carefully and use only those products that can be used safely without damage to tender leaves.

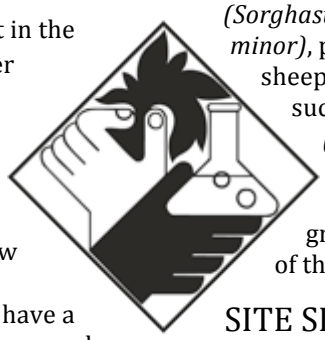
Soil Nutrient Analysis Laboratory

Soil Nutrient Analysis Laboratory; 6 Sherman Place, Unit 5102, Storrs, CT 06269-5102 • Phone: 860-486-4274
Fax: 860-486-4562 Location: Union Cottage, Depot Campus, Mansfield

WILDFLOWER MEADOWS

By Dawn Pettinell ,Manager, Soil Nutrient Analysis Laboratory

Recent years have seen a burgeoning interest in the cultivation of wildflower meadows. Wildflower meadows are viewed along the highways, featured in gardening magazines and sold as "meadow mixes" in many garden centers and horticultural catalogs. A popular misconception is that wildflower seeds can just be sprinkled on an area, and they will grow with little care or maintenance. To create a successful wildflower meadow, it is helpful to have a basic understanding of *plant succession* – the process by which one community is replaced by another until a self-sustaining or climax community is achieved. In many parts of Connecticut, an oak, hickory and hemlock forest represents the climax community. A disturbed area with exposed soil is first colonized by annual plants followed by perennials, shrubs and then finally tree species. Unless the annual/perennial stage is maintained, the meadow will soon be inhabited by tree and shrub species.



CHOOSING THE RIGHT SPECIES

Many meadow mixes contain mid-western and western native wildflowers as well as seeds from exotic wildflowers. Planting one of these mixes in New England will probably result in a colorful meadow the first year but most species will disappear the next season. Very few will self-sow.

Mixtures most likely to succeed contain native species along with readily naturalized varieties such as:

Black-eyed Susan	*Rudbeckia hirta*	Goldenrod	*Solidago canadensis*
Chicory	*Cichorium intybus*	Liatris	*Liatris spicata*
Yarrow	*Achillea millefolium*	Joe Pye Weed	*Eupatorium maculatum*
Ox-eye Daisy	*Chrysanthemum leucanthemum*	Great blue Lobelia	*Lobelia siphilitaca*
Coreopsis	*Coreopsis spp.*	New England Aster	*Aster novae-angliae*
Queen Anne's Lace	*Daucus carota*	Jerusalem Artichoke	*Helianthus tuberosus*
Evening Primrose	*Oenothera lamarckariana*	Dame's Rocket	*Hesperis matronalis*
Coneflowers	*Echinacea purpurea*	Lady's Bedstraw	*Galium verum*

Grasses are found in many meadow mixes and provide a golden touch of color in late fall. Recommended meadow grasses include big and little bluestem *(Andropogon geradii, A. scoparius)*, sideoats grama *(Bouteloua curtipendula)*, Indiangrass *(Sorghastrum nutans)*, Lesser quaking grass *(Briza minor)*, prairie dropseed *(Sporobolus heteropepis)* and sheep fescue *(Festuca ovina)*. Vigorous grass species such as tall fescue *(Festuca elatior),* orchard grass *(Dactylis glomerata)* and rye grass *(Lolium erenne)* should be avoided as they will outcompete flowering species. As a rule, grasses should compose no more than 10 to 15% of the mixture.

SITE SELECTION AND PREPARATION

Wildflower meadows generally look best when situated in a semi-natural location. They may be planted along a woodlot, bordering the lawn or patio, against a fence or adjacent to the property line. Select a well-drained site receiving 6 to 8 hours of sun each day. Good site preparation is essential in establishing a wildflower meadow. Grasses and weed species should be removed from the area and the soil should be cultivated to a depth of approximately 6 inches. Meadow wildflower seeds germinate best when in contact with bare loosened soil.

Site preparation can be done by one of 4 different techniques:

1. Till the area 6 to 8 weeks prior to planting removing all existing undesirable vegetation. Repeat cultivations every 2 to 3 weeks as necessary to eliminate any newly-germinated weeds or aggressive offenders.
2. Rototill the area approximately 6 weeks in advance of sowing, and then rake. Allow the weeds to grow back for about 3 weeks and spray with glysophate (*Roundup), a non-selective herbicide. This herbicide will finish off any remaining weeds and break down rapidly under most conditions. The dead vegetation should be removed before planting.
3. Black plastic sheeting topped with 3 or 4 inches of mulch can be laid down at least 2 or 3 months before planting. This should kill most vegetation

University of Connecticut
College of Agriculture & Natural Resources
COOPERATIVE EXTENSION SYSTEM
Department of Plant Science

Soil Nutrient Analysis Laboratory; 6 Sherman Place, Unit 5102, Storrs, CT 06269-5102 • Phone: 860-486-4274
Fax: 860-486-4562 Location: Union Cottage, Depot Campus, Mansfield

underneath it. After the black plastic is removed, cultivate the area and rake up the dead vegetation.
4. Remove existing sod using a spade for small areas or with a rented sodcutter for larger sites.

While established wildflower meadows generally do not need regular fertilization, often it is necessary to adjust the pH and add nutrients to new plantings. This is especially important if you are planning to incorporate garden perennial species as part of the planting.

Have a soil test performed to determine the pH and nutrient levels. Limestone can be added if necessary to raise the pH to between 6.0 and 6.5. Follow the fertilizer recommendations that are supplied with soil test report. Avoid excessive fertilization as it can stimulate the growth of weedy grasses that will outcompete flowering species. Good drainage is critical in the establishment of wildflower meadows. The addition of organic matter to soils will improve drainage capabilities and aid in moisture retention. A cover crop of buckwheat or annual rye can be planted and tilled in before sowing.

SOWING

Seeds may be purchased as prepared mixes or individually by species. Selection by species is often more rewarding as you can choose colors, blooming periods and varieties most suited to your location. Generally, a total of 4 to 5 pounds of seed are necessary to cover an acre. Sowing can be done in the spring or fall. Choose a windless day for sowing.

Divide the total quantity of seed in half. Spread one half of the seed over the entire area in one direction, for example north to south. Then spread the other half in a perpendicular direction like east to west. This method helps to avoid bare spots. Go over the seed with an empty lawn roller to ensure good seed contact with the soil or tamp the seed lightly with the edge of a grading rake.

Cover the newly-seeded area lightly with mulch hay, and keep the seedbed moist until the seeds germinate. Germination usually occurs in 1 to 4 weeks. Continue to provide about 1 inch of water each week until seedlings establish themselves.

MAINTENANCE

Weed control is essential for successful wildflower establishment. Learn to recognize aggressive weed species, and hand weed any intruders. Another option is to go over the bed with a grass trimmer or a hand scythe, and slice the tops off of weed species before they set seed. This procedure may need to be repeated 3 or 4 times throughout the first growing season. Herbicides are not recommended, as they will also eradicate desired species. If annuals are included in the meadow planting, some color will be evident the first year. Generally, it takes 2 to 3 years for perennial plants to become established.

Once established, little watering is required except during periods of prolonged drought. Except for weeding out undesirables, the only other maintenance necessary on a regular basis is mowing once a year in very early spring. Rake out the cut material.

ALTERNATIVE WAYS TO ESTABLISH A MEADOW

Although starting a wildflower meadow from seed is usually the most cost efficient and least laborious way to establish one, other alternatives are available. Many varieties of seeds may be started inside and the young transplants then moved into the prepared site. Other plants suitable for naturalizing may be purchased in garden centers or by mail order. Small beds can be prepared throughout the area and planted with perennial flowers. These beds can then be expanded on a yearly basis if desired. Some garden centers and nurseries are also offering wildflower sod, which can be laid down similarly to a sod lawn. Check varieties for suitability to your site.

REFERENCES

Nursery Sources: Native Plants and Seeds,New England Wildflower Society, Garden in the Woods, Hemenway Road, Framingham, MA 01701

Growing and Propagating Wild Flowers by Harry Phillips, University of North Carolina Press, P.O. Box 2288,Chapel Hill, NC 27514

The Wildflower Meadow Book by Laura C.Martin, Fast and MacMillan Publishers, East Wood Press Books, Charlotte,NC

A Garden ofWildflowers, 101 Native Species and How to Grow Them by Henry W. Art, Storey Publications, Pownal, VT

A Gardener's Encyclopedia of Wildflowers by C.Colston Burrell, Rodale Press, 1977

The Blooming Lawn: Creating a Flower Meadow by Yvette Verner, Chelsea Green Publishing Co., 1998

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Gregory J Weidemann, Director, Cooperative Extension System, University of Connecticut, Storrs. The Connecticut Cooperative Extension System is an equal opportunity employer and program provider. To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, Stop Code 9410, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964

INSECT AND PEST DESCRIPTIONS AND CONTROLS

Ants: Not all ants are a pest problem. However, ants that feed on plant parts and their nests may damage roots. The most damaging ants are those that farm and protect aphids, scale and mealy bugs for the honeydew that these insects produce.

> Control: Spray with pepper dust when the problem is first noticed. Destroying the queen ant is necessary to control the colony. For those ants that harvest honeydew, controlling the aphids, scale or mealybug infestation helps to control the ants.

Aphid: Aphids are small, pear-shaped sucking insects 1/16" to 1/8" in length. They feed in large colonies drawing sap from plant leaves, stems, bark, flowers and roots. Some species have toxic saliva that stunts or deforms plant growth. Aphids can also cause leaf wilt or curl and reduce plant vigor. They secrete sticky honeydew that provides a growing medium for sooty mold. Aphid eggs overwinter on woody stems. Aphids can also spread viral disease organisms.

> Control: Use predator insects such as ladybugs or aphid midges or spray with a hard jet of soapy water. Also spraying with an insecticidal soap or a garlic spray can control them. Alternate methods of control include spraying with an alcohol spray, Aphid-Mite Attack, Bioneem or Neemisis. As a last resort use of chemical sprays such as Pyrethrin, Sabadilla, Sulfate or Rotenone may be needed. For trees, spray with a dormant oil to kill overwintering eggs.

Bagworm: Bagworm larvae are small brown caterpillars with white or yellow heads that feed on all kinds of plant material. However, they are particularly known as serious pests of evergreens. They are voracious eaters, feeding from the tent-like bags of silken threads in which they live.

> Control: Hand pick bagworms and destroy their silken bags by crushing or burning – best done in winter. Cut the silk bag completely from the twigs. Spraying with BTK may be done in the spring when the worms are still young. Pheromone bags can be set out in August to catch males during the mating season.

Beetle: The largest order of insects. They are chewing insects that are with feeders of plant material or pollen. Beetles can be a nuisance either in their adult or grub stage or both.

> Control: Hand pick when seen. Use preventative control through garden sanitation by removing refuse that would harbor insects. Destroy grubs in the soil by deep spading. Chemical control varies with species. Properly identify the insect before selecting an insecticide.

Borers: There are many types of borers. They are either grubs (the larvae of beetles) or caterpillars. Borers feed unseen from the inside of the plant, affecting the stem, bark, roots, fruit, etc. Some cause the formation of galls. They are particularly a problem in newly planted trees, and those plants weakened by other causes.

Control: Preventative measures such as promoting vigorous plant growth and avoiding damage or injury to the plant. Trim and dress all wounds. Cut out or remove infested growth. Spray or paint bark with insecticides if needed.

Bug: Bugs are sucking insects that puncture plant tissue, usually leaves, to draw out sap. Some species lay their eggs in leaves, stems or bark and that causes damage. Bugs can cause severe defoliation and loss of plant vitality. Chinch bugs are a serious lawn pest killing large areas of turf, damage being most severe during hot, dry weather.

Control: Garden sanitation, because bugs survive the winter in discarded plant matter. Use the insecticide recommended for the specific type of bug to be controlled. For chinch bugs, use granular formulations of an insecticide applied in the early summer and again in the late summer if needed.

Caterpillar: Caterpillars are the larvae of moths and butterflies. There are great variations in size and coloration of caterpillars. They are voracious eaters and can cause severe damage to plant foliage.

Control: Garden sanitation. Deep spading of soil in the early spring can destroy those that pupate underground. Attracting birds that eat caterpillars and hand removal is a method to control minor infestations. Placing diatomaceous earth in a complete circle around the base of the plant will hinder the caterpillars from breaking the surface of the soil to climb up the plant. This should be done every several weeks during an infestation. Spraying the leaves with Neem oil can help prevent infestations. More severe infestations can be controlled with Bacillus thuringiensis (BTK), a biological control, or with insecticides. Use chemicals specifically recommended for the type of caterpillar to be controlled. For proper identification contact the State Agricultural Agent.

Cicada: Wedged shaped sucking insects 1/2" to 4" long, often confused with locusts. Females damage plants by laying eggs in twigs and branches, thereby killing or severely injuring the branch. There are annual and periodical cicadas (13 or 17 years).

Control: Cover young trees with mosquito netting.

Cricket: Relatives of the grasshopper, crickets are chewing insects. Tree crickets cause damage by laying eggs in twigs or branches.

Control: Prune damaged limbs; encourage natural predators such as birds. Use the insecticide recommended for the specific kind of cricket to be controlled.

Cutworm: A type of gray or dull brown caterpillar, 1"-2" long with a shiny head. Some cutworms cut off stems of seedlings at ground level while others can climb trees or shrubs eating leaves, buds and fruit.

Control: Hand removal or appropriate insecticide sprays. Use of beneficial nematodes is appropriate. Put collars (paper, cardboard or plastic) around new seedlings.

Fly, Maggot: There are many species of flies and only some are harmful to plants. The grub-like larvae, called maggots, can be destructive borers, feeding on leaves, roots or fruit. Those that burrow in leaves are called leaf miners. Also included in the fly family are the midges.

Control: Garden sanitation. Leaf miners should be sprayed with Neem before females lay eggs. Use the insecticide recommended for specific fly/maggot to be controlled.

Leaf Hopper: Slender wedge-shaped, sucking insect, 1/8" to 1/2" long, green or brownish in color. Leaf hoppers are fast moving, migratory insects that are difficult to control. They suck plant sap from stems and the undersides of leaves. Some species inject toxic saliva that interferes with plant growth. They can spread viral diseases from plant to plant.

Control: Difficult and temporary due to the fast moving habit of the insect. Nymphs can be washed from the leaves with a stiff spray of water. Spray with Sabadilla, insecticidal soap, pyrethrin or rotenone.

Mealybugs: A small sucking insect covered with a white waxy secretion that looks like cotton. Mealybugs can infest all parts of a plant, especially new growth, causing wilting, dwarfing, early leaf or fruit drop. They secrete honeydew that supports the growth of sooty mold and attracts ants that will "farm" the mealybugs and protect them from their predators.

Control: Import ladybugs that will destroy the ants that farm the mealybugs. Spray with insecticidal soap for severe infestations. For small infestations, spray with a stiff stream of water.

Mites: Tiny, almost microscopic relatives of the spider that look like dust particles on underside of leaves. Mites thrive under hot, dry conditions. They suck sap from the undersides of the leaves, giving the leaves a mottled look. Infested plants lose vigor and have poor growth.

Control: Spray with a direct wash of soapy water. Import insect predators such as black lady beetles or lacewings. Use insecticides such as insecticidal soap, pyrethrin, or neem. Change pesticide every so often to prevent mites from becoming resistant to any one chemical. As a last resort, rotenone may be used.

Nematodes: Microscopic wormlike plant parasites. They are often responsible for the spread of plant disease. Nematodes can cause root rot, distort or stunt growth, and cause severe galling.

Control: Get professional identification for type of nematode infestation and method of control. Contact Agricultural Extension Service.

Psyllid: Called jumping plant lice, these small sucking insects are about 1/4" in length and secrete honeydew that supports the growth of a block sooty mold that greatly reduces plant health and vigor. Other species damage leaf and flower buds thereby stunting and deforming growth. Psyllid also transmit disease organisms.

Control: Dormant oil sprays for the pear psyllid; other pysillids can be controlled with sprays of insecticidal soap or pyrethrin.

Scale: Small sucking insects covered with a protective shell. They attach themselves to plant leaves, stems and fruit. Heavy infestations cause loss of plant vigor, leaf drop and even death. Some secrete honeydew that attracts ants and encourages growth of sooty mold. Some inject toxic saliva into plant tissues.

Control: Attract natural predators such as soldier beetles, lady beetles and parasitic wasps. Prune infected growth and destroy. Apply dormant oil spray in the spring before growth begins. Insecticides such as pyrethrin and rotenone have to be applied when the insects are in the crawler stage before their protective shells are transformed.

Snails/slugs:

Control: Apply sawdust, wood ash or diatomaceous earth around the base of the plant to keep snails and slugs away.

Thrips: A very small thin insect, about as wide as a fine needle. They damage plants by piercing and rasping leaves, flowers and buds and sucking the contents of the plants cells out. Some species are predators of other small insects and pests. Eggs are laid in plant stems or leaves.

Control: Small infestations can be controlled with ladybug beetles and aphid lions. More severe infestations should be sprayed with insecticidal soap, pyrethrin or neem. Start spraying with insecticides as soon as pest or damage is noted and repeat as directed on insecticide label, or three or four times at one to two week intervals. As a last resort, dust the undersides of the leaves with sabadilla or diatomaceous earth.

Webworms: Webworms are beige caterpillars that feed under a protective web coating. Webworms chew the leaves and spin large, conspicuous webs over the ends of branches of many deciduous trees and shrubs.

Control: Pick caterpillars from plants and drop into a pail of soapy water; cut out and destroy protective webs. Spray with BTK when the larvae are small and the web is not extensive. Prune out all affected branches. Use pyrethrin or rotenone as a last resort.

Whitefly: Small sucking insects 1/20" long. White flies have two pairs of wings covered with a white waxy powder. They attack the underside of leaves and stems, piercing them and sucking the sap. Whiteflies secrete honeydew that supports the growth of black sooty mold. Whiteflies can spread viral diseases.

Control: Hang yellow sticky traps to catch adults. Spray the undersides of leaves with insecticidal soap, kinoprene or garlic oil. Apply insecticide when the pest or damage is first noted, and repeat as directed on the label, or three or four times at one to two week intervals. As a lasts resort, pyrethrin or rotenone can be used. Attract native parasitic wasps and predatory beetles.

DISEASE DESCRIPTIONS AND CONTROLS

Anthracnose: A fungus disease that occurs when there exists wet growing conditions. Anthracnose is characterized by localized areas of diseased tissue, called lesions, which appear on stems, leaves and fruit. It appears first as small, irregular yellow or brown spots that darken as they age. Plant dieback often results from an anthracnose infection.

Control: Avoid drought stress. Spray with a dormant oil spray of bordeaux mix. Prune out all infected growth and dispose of properly.

Bacterial Disease: Bacteria are microscopic organisms. Bacteria that affect plants fall into three categories according to their symptoms: those that affect the vascular system called wilts; those that cause plant tissue overgrowth (hyperplasia) such as crown galls, and those which kill plant tissue (necrosis) such as blights, rots and leaf spots. Bacteria organisms can survive in the soil for years and enter the plant through wounds that are caused by weather, insects and careless gardening, as well as through plant pores. Some insects also transmit bacterial disease.

Control: Garden sanitation. Maintain healthy, vigorous plants, avoid injuring plants and protect them from insect damage. Prune away infected growth, or remove severely infected plants entirely. Sterilize tools used in pruning or removing plants with a 70% solution of denatured alcohol or a 10% solution of bleach. Spray plants with protectants such as streptomycin and other antibiotics.

Black Knot: A fungus disease affecting Prunus species. Black knot causes rough black cylindrical swellings on the small branches of trees. The infected limbs are girdled and killed; the growth of the entire tree is stunted and dwarfed.

Control: Spray with zineb, bordeux mixture, or liquid lime-sulfur before the buds open. Spray again when the trees are in flower, and once more in the fall. Cut out infected growth 3 to 4 inches beyond the knot during winter before growth begins, and paint cuts after surgery with actidione.

Blight: Blights usually are fungus diseases, although Fire Blight, a disease of rosaceous plants, is a bacterial disease. Blights cause sudden and conspicuous leaf and fruit damage, as opposed to leaf spot or wilt. Rotting often occurs as a secondary symptom.

Control: Prevent conditions favorable for infection. Plant in sunny, well-drained locations with good air circulation between plants. Spray with appropriate fungicide or antibiotic at the rate specified for the specific blight to be controlled. Prune out and dispose of diseased growth.

Blotch Disease: An intermediate disease between blight, where an entire leaf or shoot dies, and leaf spot, where the necrotic tissue occurs in a definite limited area. Blotches are irregular areas of necrotic tissue on leaves and fruit. Infected areas can be either large or small.

Control: Prevent conditions favorable for infection. Plant is sunny, well-drained locations with good air circulation between plants. Spray with appropriate fungicide or antibiotic at the rate specified for the specific blotch to be controlled. Prune out and dispose of diseased growth.

Canker, Dieback: A fungus or bacterial infection on the trunk, branches, stems and twigs of trees and shrubs. Cankers are irregularly shaped patches of dead wood, often oozing a dark watery sap. The infection kills the vascular system resulting in plant dieback, from the top down. Disease organisms enter the plant through wounds and insect damage.

Control: Avoid damaging tree trunks and shrub stems, as wounds are a common place for cankers to start. Protect plants from mowers and other garden equipment. Also protect plants from insect and pest damage. Prune off diseased branches or limbs and/or gouge out small cankers with a pruning knife. Disinfect pruning tools between cuts by sterilizing with a 70% solution of denatured alcohol or a 10% solution of bleach.

Fairy Rings: Fairy rings are circles of white mushrooms that appear on the lawn. Adjacent to these circles a bank of quick growing grass appears, though other turf close to the ring dies.

Control: Spade or loosen soil and inject water to the roots of the dying grass. For total eradication of severe infections dig out and replace existing lawn.

Leaf Blister, Leaf Curl: A fungus that causes hyperplastic deformities of leaves and fruit. Leaves develop thick curled edges and blisters, causing premature leaf fall, and an overall loss of plant health and vigor. Leaf blister and leaf curl attack young, developing leaves in spring. Older foliage is usually not susceptible.

Control: Garden sanitation. Maintain healthy vigorous plants that will resist infection. Remove any dead growth that might harbor disease organisms and keep area free of weeds and debris.

Leaf Spot: A fungus that causes a limited area of necrotic lesions (dead tissue) on leaves. Most leaf spots flourish during wet seasons and there are hundreds of different types. Most are not very damaging, although they are closely related to anthracnose, spot anthracnose and black spot.

Control: Garden sanitation. Hand pick affected leaves and remove discarded plant material, weeds and debris from the garden entirely. If a severe infection should occur, contact the state Agricultural Extension Service for information about appropriate fungicides and controls to use.

Powdery Mildew: A fungus disease that grows on the surface of the plant. Powdery mildew is a common parasitic mildew, especially in the south. It covers leaves with a thin white web of fungus hyphae and thrives in humid conditions that occur when cool nights follow warm days, such as the spring or fall, especially in low shady areas where there is poor air circulation. Powdery mildew can cause dwarfing and stunting of growth. However, it occurs late enough in the growing season so as not to provide serious problems to most plants.

Control: Garden sanitation. Provide good air circulation. Remove weeds and debris. If a severe infection occurs spray with sulfur or lime-sulfur every seven to ten days as needed.

Rot: Rots are caused by a variety of fungi and bacteria. Almost all plants and plant anatomy are susceptible to rot organisms. Rots develop best in warm humid weather causing the onset of decay. They infect weak, injured plants, entering through wounds and insect damage. Contaminated garden tools also help to spread the disease.

Control: Prevention by maintaining healthy, vigorous plants. Provide for good drainage and air circulation. Remove weeds and other debris that might harbor rot organisms. Spray with appropriate fungicide or antibiotic for the type of rot to be controlled. Prune out and remove all dead and diseased plant parts. Sterilize tools after pruning in a 70% solution of denatured alcohol or a 10% solution of bleach.

Rust: A fungus disease, rusts are obligate parasites that survive only on living plant material. Rusts are either autoecious, completing their life cycle on a single host species, or heteroecious, needing two different host species in order to complete their life cycle, such as the Cedar-Apple Rust. Symptoms of a rust infection are the rust colored spores the fungus produces, as well as yellowing of leaves and stunted growth.

Control: Prevention is the best method of control as rusts are difficult to eradicate once established. Purchase disease resistant varieties and remove alternate host from area if possible. Provide good air circulation to all plants and avoid wetting plants while watering. Remove and destroy severely affected parts. Spraying with recommended fungicide for the type of rust to be controlled is sometimes effective. Plants may be dusted with sulfur early in the season as a preventive measure.

Scab: A disease characterized by an overgrowth of tissue or raised lesions in specific areas on leaves, stems or fruits. Some diseases formerly classified as scab have been reclassified as spot anthracnose.

Control: Plant resistant varieties. Lowering the pH of the soil to below 5.2 will reduce the chances of disease infestation. Prune out and destroy infected growth. Rake and dispose of fallen leaves. Spray with the appropriate fungicide or antibiotic as specified for the scab to be controlled.

Smut: A fungus named for its sooty black spore masses that affect cereals and grasses. Plants are infected in three ways: by fungus spores on the seed, spores in the seed, or by windblown spores on growing plant tissue.

Control: Plant resistant varieties or treated plants. Remove and destroy infected plants.

Snow Mold: Snow mold is a slimy gray mold that appears on the top of turf grasses at the edges of snow patches. It occurs when turf is covered with snow for long periods of time and usually causes little permanent damage. The mold causes the grass to wither and turn light brown, although recovery usually occurs in six weeks as moisture decreases and sunlight increases.

Control: Mowing the grass short in the fall and removing the clippings.

Spot Anthracnose: A fungus that causes leaf spotting, usually a necrotic center surrounded by hyperplasia (tissue overgrowth).

Control: Spray with appropriate fungicide or antibiotic at monthly intervals beginning in the spring when the buds start to open.

Virus Disease: Viruses are obligate parasites capable of increasing in living cells only. Viruses invade the plant and spread throughout. Once a plant is infected nothing can completely cure the disease, although plants can often recover through their own healing processes. Virus diseases fall into two categories: those that cause mottling of foliage and those that cause yellowing of foliage through the suppression of chlorophyll development, as well as stunting, leaf curl, and abnormal branching. Virus disease is usually transmitted from plant to plant by insects, mites, nematodes and aphids. Viruses are also transmittable through rubbing or abrasions such as through gardeners' hands or tools.

Control: Purchase certified disease-free plants. Maintain healthy vigorous plants and control insect vectors. Remove and dispose of infected plants and weed hosts.

Wilt: A systemic fungus that affects the plant's vascular system, which carries water through the plant, causing symptoms of wilting. Wilt fungi enter the plant through wounds and are often transmitted through the soil or by insects.

Control: Maintain healthy, vigorous plants, control insects that spread wilt and remove and destroy infected plants.

PHYSIOLOGICAL DISEASES

Physiological diseases deal with the processes, activities and phenomena incidental to and characteristic of plant life. There are quite a number of outside influences that affect the inner workings of plant life, especially when these influences are above or below the normal tolerance levels of any specific plant. The following list identifies some of the most common physiological diseases:

A. EXCESSIVE DISEASES

1. Oedema (Edema): A watery swelling of plant organs or parts due to excessive water accumulation. Caused by poor drainage. Increase air circulation around plants and drill holes through adjacent soil so that water can drain.

2. Scorching: Leaves become dried out and brittle. Caused by infection, lack of some nutrient or excessive soil dryness due to drought conditions. Check to see that irrigation is functioning properly. Deep watering by hand is recommended.

3. Sulfur Dioxide: The collection of automobile emissions on the leaf surface that happens in highly congested areas. It appears as a sooty dirt covering on the leaf surface and can be somewhat relieved by frequently watering down the foliage with a high-pressured hose.

B. DEFICIENCY DISEASES

1. Chlorosis: Yellowing of leaf due to insufficient iron, nitrogen, manganese, boron, zinc or magnesium in the soil. Can also be caused by lack of oxygen to roots in poorly drained waterlogged soils. Corrected by spraying leaves with iron chelate or soaking it into soil.

2. Lack of Nitrogen: Stunted, spindly top and root growth. Premature leaf fall. Yellow leaves (later orange, later red). Correct with manure, sodium nitrate, blood meal or fishmeal.

3. Lack of Phosphorus: Leaves dull, bluish green to purplish and bronze. Same symptoms as lack of nitrogen. Poor flowering. Correct with quick-acting superphosphate, rock phosphate or bone meal.

4. Lack of Potassium: Tips and edges of leaves turn yellow, then brown. Stunted growth. Correct with muriate of potash, unleached wood ashes, greensand, kelp meal or composted manure.

5. Lack of Magnesium: Pines go yellow, browning of leaves, yellow/red tinting at margins. Leaves die. Correct with Epsom salts (magnesium sulfate).

No Maintenance Manual, no matter how extensive, could anticipate every problem or pest that might occur or develop in a landscape. In general, problems should be noticed and diagnosed as soon as possible before they become detrimental to the health of the plants. Refer to the State Agricultural Extension Agent and the following Bibliography for more extensive descriptions of landscape maintenance and integrated pest management:

BIBLIOGRAPHY

Buczacki, Stefan, The Plant Care Manual, Crown Publishers, New York, New York, 1992.

Clausen, Ruth Rogers and Ekstrom, Nicolas H., Perennials for American Gardens, Random House, New York, New York, 1989.

Conover, Herbert S., Grounds Maintenance Handbook, McGraw-Hill Book Co., 3rd Edition, 1977.

Darke, Rick, The Color Encyclopedia of Ornamental Grasses, Timber Press, Portland, Oregon, 1999.

Dirr, Michael A., Manual of Woody Landscape Plants, Stipes Publishing Company, Champaign, Illinois, Third Edition, 1983.

DiSabato-Aust, Tracy, The Well-Tended Perennial Garden, Timber Press, Portland, Oregon, 1998.

Donahue, Roy L., Soils: An Introduction to Soils and Plant Growth, Prentice Hall Inc., Englewood Cliffs, New Jersey, 1965.

Feltwell, John, Clematis for all Seasons, Firefly Books, Collins & Brown Limited, 1999.

Hill, Lewis, Pruning Simplified, Storey Communications, Inc., Pownal, Vermont, 1979.

Janick, Jules, Horticultural Science, W. H. Freeman and Company, San Francisco, 1963.

Macunovich, Janet, Caring for Perennials, Storey Books, Pownal, Vermont, 1997.

Manual of Soil Management, Environmental Design Press, Reston, Virginia, 1978.

Musser, H. Burton, Turf Management, McGraw-Hill Cook Company, Inc., New York, New York, 1966.

Organic Gardener's Handbook of Natural Insect and Disease Control, The, edited by Ellis, Barbara W. and Bradley, Fern Marshall, Rodale Press, Emmaus, Pennsylvania, 1992.

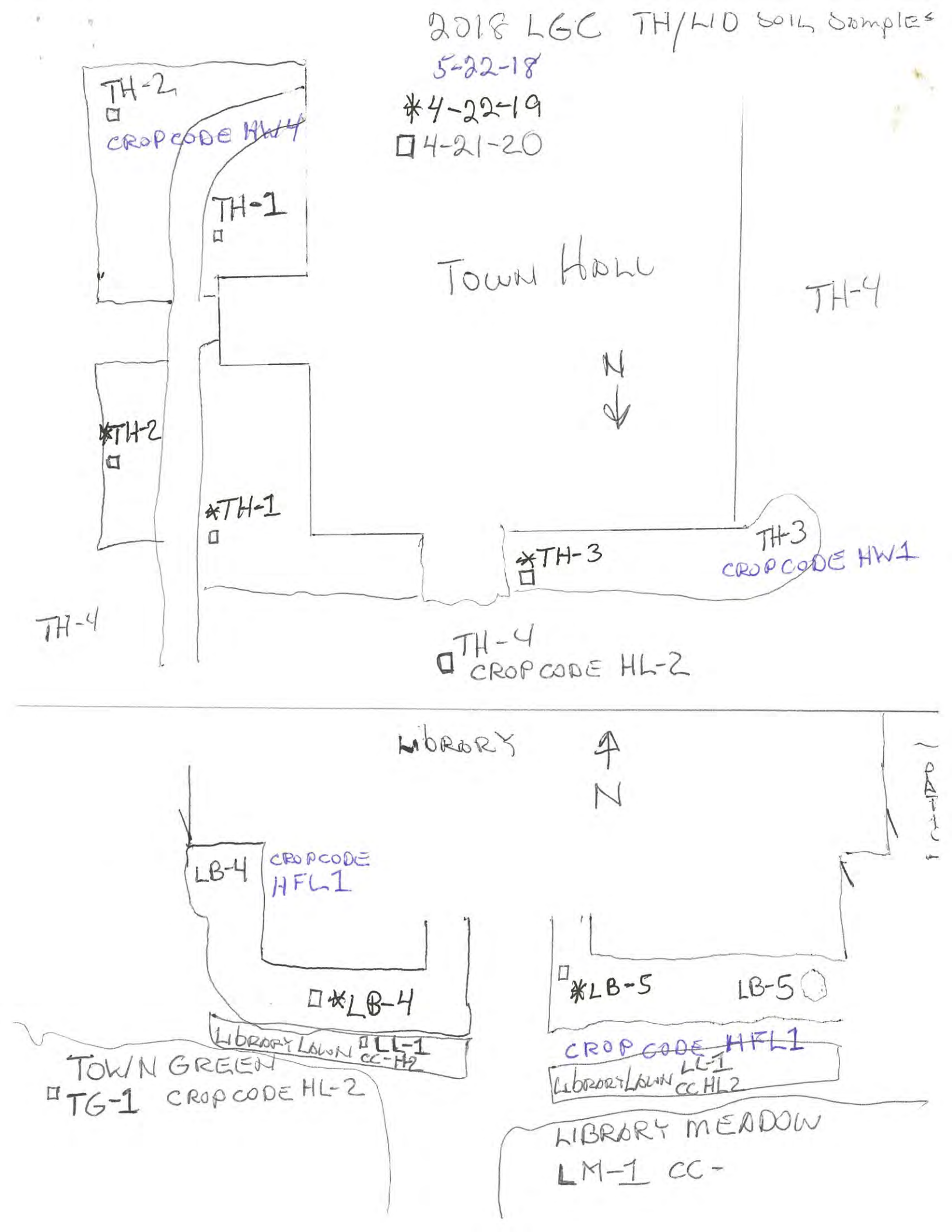
Ottesen, Carole, Ornamental Grasses, The Amber Wave, McGraw-Hill Publishing Company, Inc., New York, New York, 1989.

Pirone, Pascal P., Diseases and Pests of Ornamental Plants, John Wiley & Sons, New York, New York, Fifth Edition, 1978.

Rodale's Encyclopedia of Organic Gardening, edited by Bradley, Fern Marshall and Ellis, Barbara W., Rodale Press, Emmaus, Pennsylvania, 1992.

Shurtleff, Malcolm C., How To Control Plant Diseases in Home and Garden, Iowa State University, Ames, Iowa, 1966.

Wyman, Donald, Wyman's Gardening Encyclopedia, The MacMillan Company, New York, New York, 1971.


2018 LGC TH/LHD Soil Samples
5-22-18
*4-22-19
□ 4-21-20
TH-2
CROP CODE HW4
TH-1
TOWN HALL
TH-4
N
*TH-2
*TH-1
*TH-3
TH-3
CROP CODE HW1
TH-4
TH-4
CROP CODE HL-2
LIBRARY
N
LB-4
CROP CODE
HFL1
*LB-4
*LB-5
LB-5
LIBRARY LAWN
LL-1
CC-H2
CROP CODE HFL1
LIBRARY LAWN
LL-1
CC HL2
TOWN GREEN
TG-1 CROP CODE HL-2
LIBRARY MEADOW
LM-1 CC-

UConn Soil Nutrient Analysis Laboratory
6 Sherman Place, Unit 5102, Union Cottage
Storrs, CT 06269-5102
860-486-4274
www.soiltest.uconn.edu

UCONN
COLLEGE OF AGRICULTURE, HEALTH AND NATURAL RESOURCES
PLANT SCIENCE AND LANDSCAPE ARCHITECTURE

Soil Test Report

Order Number: 4808

Prepared For:
William Denow
164 Hamburg Rd
LYME, CT 06371

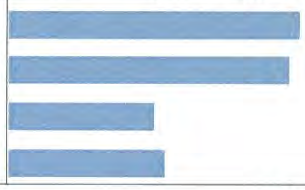
wdenow@comcast.net
860.434.1929

Sample Information:
Sample Name: th1
Lab Number: 4193
Area Sampled:
Received: 5/29/2018
Reported: 5/31/2018

Results

Nutrients Extracted From Your Soil (Modified Morgan)

		Below Optimum	Optimum	Above Optimum	Excessive*
Calcium	**1270 lbs/acre**				
Magnesium	**117 lbs/acre**				
Phosphorus	**5 lbs/acre**				
Potassium	**95 lbs/acre**				



** Excessive only defined for Phosphorus (>40 lbs/acre)*

Soil pH (1:1, H2O)	5.7
Buffered pH (Mod. Mehlich)	6.3
Est. Cation Exch. Capacity (cmole+/100g)	6.4
Exch. Acidity (meq/100g)	2.6

Base Saturation	***%***	***Suggested***
Potassium	2	2.0 - 7.0
Magnesium	7	10 - 30
Calcium	50	40 - 50

Element	***ppm***	***Soil Range***
Boron (B)	0.1	0.1 - 2.0
Copper (Cu)	0.1	0.3 - 0.8
Iron (Fe)	8.5	1.0 - 40.0
Manganese (Mn)	2.8	3.0 - 20.0
Zinc (Zn)	0.8	0.1 - 70.0
Sulfur (S)	13.8	10 - 100
Aluminum (Al)	71.3	10 - 300
Est. Total Lead (Pb)	low	

Limestone & Fertilizer Recommendations for Groundcovers

Limestone (Target pH of 6.3)

5 lbs / 100 sq ft

UConn Soil Nutrient Analysis Laboratory
6 Sherman Place, Unit 5102, Union Cottage
Storrs, CT 06269-5102
860-486-4274
www.soiltest.uconn.edu

UCONN
COLLEGE OF AGRICULTURE, HEALTH AND NATURAL RESOURCES
PLANT SCIENCE AND LANDSCAPE ARCHITECTURE

Soil Test Report

Order Number: 4808

Prepared For:
William Denow
164 Hamburg Rd
LYME, CT 06371

wdenow@comcast.net
860.434.1929

Sample Information:
Sample Name: th2
Lab Number: 4194
Area Sampled:
Received: 5/29/2018
Reported: 5/31/2018

Results

Nutrients Extracted From Your Soil (Modified Morgan)

		Below Optimum	Optimum	Above Optimum	Excessive*
Calcium	**1357 lbs/acre**				
Magnesium	**130 lbs/acre**				
Phosphorus	**9 lbs/acre**				
Potassium	**167 lbs/acre**				

** Excessive only defined for Phosphorus (>40 lbs/acre)*

Soil pH (1:1, H2O)	6.0
Buffered pH (Mod. Mehlich)	6.3
Est. Cation Exch. Capacity (cmole+/100g)	6.8
Exch. Acidity (meq/100g)	2.6

Base Saturation	***%***	***Suggested***
Potassium	3	2.0 - 7.0
Magnesium	8	10 - 30
Calcium	50	40 - 50

Element	***ppm***	***Soil Range***
Boron (B)	0.2	0.1 - 2.0
Copper (Cu)	0.2	0.3 - 0.8
Iron (Fe)	15.6	1.0 - 40.0
Manganese (Mn)	2.7	3.0 - 20.0
Zinc (Zn)	1.2	0.1 - 70.0
Sulfur (S)	14.5	10 - 100
Aluminum (Al)	74.0	10 - 300
Est. Total Lead (Pb)	low	

Limestone & Fertilizer Recommendations for Groundcovers

Limestone (Target pH of 6.3)

5 lbs / 100 sq ft

UConn Soil Nutrient Analysis Laboratory
6 Sherman Place, Unit 5102, Union Cottage
Storrs, CT 06269-5102
860-486-4274
www.soiltest.uconn.edu

UCONN
COLLEGE OF AGRICULTURE, HEALTH AND NATURAL RESOURCES
PLANT SCIENCE AND LANDSCAPE ARCHITECTURE

Soil Test Report

Order Number: 4808

Prepared For:
William Denow
164 Hamburg Rd
LYME, CT 06371

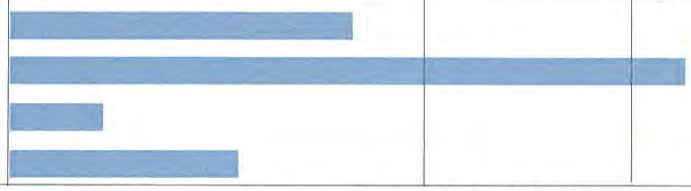
wdenow@comcast.net
860.434.1929

Sample Information:
Sample Name: th3
Lab Number: 4195
Area Sampled:
Received: 5/29/2018
Reported: 5/31/2018

Results

Nutrients Extracted From Your Soil (Modified Morgan)

		Below Optimum	Optimum	Above Optimum	Excessive*
Calcium	**1476 lbs/acre**				
Magnesium	**316 lbs/acre**				
Phosphorus	**3 lbs/acre**				
Potassium	**137 lbs/acre**				



** Excessive only defined for Phosphorus (>40 lbs/acre)*

Soil pH (1:1, H2O)	6.0
Buffered pH (Mod. Mehlich)	6.3
Est. Cation Exch. Capacity (cmole+/100g)	7.8
Exch. Acidity (meq/100g)	2.6

Base Saturation	***%***	***Suggested***
Potassium	2	2.0 - 7.0
Magnesium	17	10 - 30
Calcium	47	40 - 50

Element	***ppm***	***Soil Range***
Boron (B)	0.2	0.1 - 2.0
Copper (Cu)	0.1	0.3 - 0.8
Iron (Fe)	32.8	1.0 - 40.0
Manganese (Mn)	4.1	3.0 - 20.0
Zinc (Zn)	0.9	0.1 - 70.0
Sulfur (S)	20.5	10 - 100
Aluminum (Al)	128.0	10 - 300
Est. Total Lead (Pb)	low	

Limestone & Fertilizer Recommendations for Deciduous Trees & Shrubs

Limestone (Target pH of 6.3)

5 lbs / 100 sq ft

UConn Soil Nutrient Analysis Laboratory
6 Sherman Place, Unit 5102, Union Cottage
Storrs, CT 06269-5102
860-486-4274
www.soiltest.uconn.edu

UCONN
COLLEGE OF AGRICULTURE, HEALTH AND NATURAL RESOURCES
PLANT SCIENCE AND LANDSCAPE ARCHITECTURE

Soil Test Report

Order Number: 4808

Prepared For:
William Denow
164 Hamburg Rd
LYME, CT 06371

wdenow@comcast.net
860.434.1929

Sample Information:
Sample Name: lb4
Lab Number: 4196
Area Sampled:
Received: 5/29/2018
Reported: 5/31/2018

Results

Nutrients Extracted From Your Soil (Modified Morgan)

		Below Optimum	Optimum	Above Optimum	Excessive*
Calcium	**964 lbs/acre**				
Magnesium	**94 lbs/acre**				
Phosphorus	**5 lbs/acre**				
Potassium	**89 lbs/acre**				

** Excessive only defined for Phosphorus (>40 lbs/acre)*

Soil pH (1:1, H2O)	5.6
Buffered pH (Mod. Mehlich)	6.3
Est. Cation Exch. Capacity (cmole+/100g)	5.5
Exch. Acidity (meq/100g)	2.6

Base Saturation	***%***	***Suggested***
Potassium	2	2.0 - 7.0
Magnesium	7	10 - 30
Calcium	43	40 - 50

Element	***ppm***	***Soil Range***
Boron (B)	0.1	0.1 - 2.0
Copper (Cu)	0.1	0.3 - 0.8
Iron (Fe)	8.7	1.0 - 40.0
Manganese (Mn)	3.1	3.0 - 20.0
Zinc (Zn)	0.9	0.1 - 70.0
Sulfur (S)	14.3	10 - 100
Aluminum (Al)	66.8	10 - 300
Est. Total Lead (Pb)	low	

Limestone & Fertilizer Recommendations for Flowers (Annuals, Perennials, Bulbs) & Ornamental Grasses

Limestone (Target pH of 6.5)

5 lbs / 100 sq ft

UConn Soil Nutrient Analysis Laboratory
6 Sherman Place, Unit 5102, Union Cottage
Storrs, CT 06269-5102
860-486-4274
www.soiltest.uconn.edu

UCONN
COLLEGE OF AGRICULTURE, HEALTH AND NATURAL RESOURCES
PLANT SCIENCE AND LANDSCAPE ARCHITECTURE

Soil Test Report

Order Number: 4808

Prepared For:
William Denow
164 Hamburg Rd
LYME, CT 06371

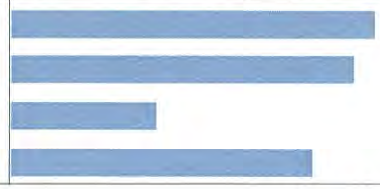
wdenow@comcast.net
860.434.1929

Sample Information:
Sample Name: lb5
Lab Number: 4197
Area Sampled:
Received: 5/29/2018
Reported: 5/31/2018

Results

Nutrients Extracted From Your Soil (Modified Morgan)

		Below Optimum	Optimum	Above Optimum	Excessive*
Calcium	**1591 lbs/acre**				
Magnesium	**146 lbs/acre**				
Phosphorus	**5 lbs/acre**				
Potassium	**182 lbs/acre**				



** Excessive only defined for Phosphorus (>40 lbs/acre)*

Soil pH (1:1, H2O)	5.8
Buffered pH (Mod. Mehlich)	6.3
Est. Cation Exch. Capacity (cmole+/100g)	7.4
Exch. Acidity (meq/100g)	2.6

Base Saturation	***%***	***Suggested***
Potassium	3	2.0 - 7.0
Magnesium	8	10 - 30
Calcium	53	40 - 50

Element	***ppm***	***Soil Range***
Boron (B)	0.1	0.1 - 2.0
Copper (Cu)	0.1	0.3 - 0.8
Iron (Fe)	5.1	1.0 - 40.0
Manganese (Mn)	4.7	3.0 - 20.0
Zinc (Zn)	1.1	0.1 - 70.0
Sulfur (S)	19.0	10 - 100
Aluminum (Al)	56.1	10 - 300
Est. Total Lead (Pb)	low	

Limestone & Fertilizer Recommendations for Flowers (Annuals, Perennials, Bulbs) & Ornamental Grasses

Limestone (Target pH of 6.5)

5 lbs / 100 sq ft

Maintenance For Lyme Town Campus Notes and Observations
In addition to regular maintenance.

2021
COVID-19 Pandemic and social isolation impacted all activities. Most restrictions lifted in May.

May
May– Meadow–planted plugs:
Agastache foeniculum - Anise Hyssop (summer bloom)
Amsonia salicifolia - Bluestar (spring bloom)
Penstemon digitalis Foxglove Beardtongue (spring/summer bloom)
Pycnanthemum tenuifolium - Mountain Mint (summer bloom)
Zizia aurea - Golden Alexander (spring bloom)

Agastache foeniculum


Wasowski, Sally and Andy

Agastache foeniculum (Pursh) Kuntze

Blue Giant Hyssop, Blue Giant-hyssop, Fragrant Giant Hyssop, Lavender Hyssop, Anise Hyssop

Lamiaceae (Mint Family)

Synonym(s): *Agastache anethiodora*

USDA Symbol: AGFO

USDA Native Status: L48 (N), CAN (N)

A 2-4 ft. perennial with dense, terminal spikes of small, tubular, bright blue flowers. Leaves are opposite, oval, toothed and whitish beneath give off the scent of anise when bruised. The sturdy, erect blue giant-hyssop is of the most ornamental native mints.

The genus *Agastache* describes the flower clusters and is derived from two Greek words *agan* meaning *much* and *stachys* meaning *ear of grain*.

Amsonia tabernaemontana var. *salicifolia*

Amsonia tabernaemontana Walter var. *salicifolia* (Pursh) Woodson

Eastern Bluestar

Apocynaceae (Dogbane Family)

Synonym(s): *Amsonia salicifolia*

USDA Symbol: AMTAS

USDA Native Status: L48 (N)

Maintenance For Lyme Town Campus Notes and Observations
In addition to regular maintenance.

2021

Penstemon digitalis

Smith, R.W.

Penstemon digitalis Nutt. ex Sims

Mississippi Penstemon, Mississippi Beardtongue, Smooth White Penstemon, Smooth White Beardtongue, Talus Slope Penstemon, Talus Slope Beardtongue, Foxglove Penstemon, Foxglove Beardtongue

Scrophulariaceae (Figwort Family)

Synonym(s): *Penstemon laevigatus* ssp. *digitalis*, *Penstemon laevigatus* var. *angulatus*

USDA Symbol: PEDI

USDA Native Status: L48 (N), CAN (I)

The foliage of this robust perennial can be semi-evergreen in the South. Its erect, 2-5 ft. stems are topped with stalked clusters of white, tubular, unevenly five-lobed flowers which rise in pairs from the upper leaf axils.

Pycnanthemum tenuifolium

Cressler, Alan

Pycnanthemum tenuifolium Schrad.

Narrowleaf Mountain Mint, Slender Mountain Mint, Common Horsemint

Lamiaceae (Mint Family)

Synonym(s): *Koellia flexuosa*, *Pycnanthemum flexuosum*

USDA Symbol: PYTE

USDA Native Status: L48 (N), CAN (N)

This stiff, erect, compact, clump-forming mint has narrow leaves subtending the flower clusters. The minty-smelling plants are 20-30 in. tall and have terminal flower clusters composed of numerous, small, two-lipped corollas varying from whitish to lavender, with purple spots.

Zizia aurea

Flaigg, Norman G.

Zizia aurea (L.) W.D.J. Koch

Golden Zizia, Golden Alexanders

Apiaceae (Carrot Family)

Synonym(s):

USDA Symbol: ZIAU

USDA Native Status: L48 (N), CAN (N)

Golden alexanders is a short-lived perennial with branching, erect, reddish stems. The lower leaves are divided into threes twice while the upper leaves are divided once. The yellow flowers less than 1/8 inch long. Each tiny flower has 5 sepals, 5 petals, and 5 stamens. Separate clusters of tiny, yellow flowers gather into a large, flat-topped flower head, the middle flower of each umbel being stalkless. Dry seedheads turn purple, adding summer interest. The plant is 1-3 ft. tall.

Maintenance For Lyme Town Campus Notes and Observations
In addition to regular maintenance.

2020
COVID-19 Pandemic and social isolation impacted all activities after February

March
Meadow weedwhacked
April
Hamburg Firehouse – weeded/clean-up front/side beds
Lymewood – weeded/clean up all beds- 6 bags of mulch
May
Meadow -planted 1 Dogwood on North boundary
May 22– Meadow–planted plugs:
Baptisa Australis-False Blue Indigo
Silene regia-Royal Catchfly
Symphyotrichum oblongifolium-Aromatic Aster
Zizia aurea-Golden Alexander
July
Drought stress-Apply water
October
Clean-up
Plant tulips at Town hall
250 daffodil-north wall Town hall entrance
November
Meadow-North side, plant 3 redbud trees from Lyme Land Trust
December
Planted 100 tulip Library west bed
Planted 80 daffodils at Lyme sign Rte 156

Baptisia australis

Baptisia australis (L.) R. Br.

Blue Wild Indigo, Wild Blue Indigo, Blue False Indigo

Fabaceae (Pea Family)

Synonym(s):

USDA Symbol: BAAU

USDA Native Status: L48 (N), CAN (I)

Makin, Julie

Rising 2-4 ft. high from a woody base, blue wild indigo is a bushy, robust perennial. Flowers are blue-purple and pea-like, congested in dense, upright, terminal spikes, 4-16 in. long. Leaves are divided into three leaflets. In late fall the plant turns silvery-gray, sometimes breaking off at ground level and tumbling about in the wind.

Like other members of the pea family, this plant requires the presence of microorganisms that inhabit nodules on the plant's root system and produce nitrogen compounds necessary for the plant's survival.

Maintenance For Lyme Town Campus Notes and Observations
In addition to regular maintenance.

2020

Silene regia

Cressler, Alan

Silene regia Sims

Royal Catchfly

Caryophyllaceae (Pink Family)

Synonym(s):

USDA Symbol: SIRE2

USDA Native Status: L48 (N)

Royal catchfly is a 2-5 ft., erect perennial with bright-red, tubular flowers. The flowers flare into five, slightly toothed, slender petals and are up to 2 in. across. The stems are smooth, but the broad, sometimes clasping leaves, are pubescent.

The red flowers attract hummingbirds.

Symphyotrichum oblongifolium

Bloodworth, Stefan

Symphyotrichum oblongifolium (Nutt.) G.L. Nesom

Aromatic Aster, Aromatic American Aster, Fall Aster, Wild Blue Aster, Shale Aster

Asteraceae (Aster Family)

Synonym(s): *Aster kumleinii*, *Aster oblongifolius*, *Aster oblongifolius* var. *angustatus*, *Aster oblongifolius* var. *orientis*, *Aster oblongifolius* var. *rigidulus*, *Lasallea oblongifolia*, *Virgulus oblongifolius*

USDA Symbol: syob

USDA Native Status: L48 (Lower 48 US States) (N)

This perennial's rigid stems, usually less than 20 in. tall, are much-branched from the base. The narrow leaves and stems are sparsely covered with short hairs. Pink or lavender-blue flowers are many-petaled and aromatic with a yellow center.

Maintenance For Lyme Town Campus Notes and Observations
In addition to regular maintenance.

2019

April
General clean-up
Town Hall and Library–8 bags mulch, 8 bags buckwheat hulls
Hamburg Firehouse–12 bags mulch
Lymewood–10 bags of mulch
May
Town Hall–slice seed/plug aerate

Maintenance For Lyme Town Campus Notes and Observations
In addition to regular maintenance.

2018

April
April 23–Apply lime
Skimmias at library have severe winter damage
May
Pruned deadwood from all oaks
Mulched bare spots
July
Meadow–planted:
Asclepias tuberosa–Butterfly weed
Rudbeckia fulgida–Black-eyed Susan
Echinacea–Coneflower
October
500 daffodil-Tiffany triangle
500 daffodil-north wall Town Hall
50 daffodil-Library west

Asclepias tuberosa

Asclepias tuberosa L.

Butterflyweed, Butterfly Weed, Butterfly Milkweed, Orange Milkweed, Pleurisy Root, Chigger Flower

Asclepiadaceae (Milkweed Family)

Synonym(s):

USDA Symbol: ASTU

USDA Native Status: L48 (N), CAN (N)

Cressler, Alan

Maintenance For Lyme Town Campus Notes and Observations
In addition to regular maintenance.

2018

Rudbeckia fulgida

Rudbeckia fulgida Aiton

Orange Coneflower, Orange Rudbeckia, Perennial Black-eyed Susan

Asteraceae (Aster Family)

Synonym(s):

USDA Symbol: RUFU2

USDA Native Status: L48 (N), CAN (I)

Bloodworth, Stefan

Echinacea purpurea

Echinacea purpurea (L.) Moench

Eastern Purple Coneflower, Purple Coneflower

Asteraceae (Aster Family)

Synonym(s): *Brauneria purpurea*, *Echinacea purpurea* var. *arkansana*, *Rudbeckia purpurea*

USDA Symbol: ECPU

USDA Native Status: L48 (N), CAN (I)

Cressler, Alan

Maintenance For Lyme Town Campus Notes and Observations
In addition to regular maintenance.

2017

April
Spring clean-up
Library- mulch: 15 bags, 2 coco
Town Hall-5 bags mulch
Firehouse- 15 bags mulch
Lymewood- mulch: 10 bags mulch

May
Library- Yoshino flowering cherry
July
Boxwoods-spayed copper fungicide
Remove sprouts from all Witch Hazel
August
Boxwoods-spayed copper fungicide
September
Boxwoods-spayed copper fungicide
Library – Replace dwarf white pines with 2 *pinus strobus micro "WB"*-Micro Witch's Broom eastern white pine
October
50 daffodil-Tiffany triangle
100 daffodil-north end campus

Maintenance For Lyme Town Campus Notes and Observations
In addition to regular maintenance.

2016- Grounds established.

The Pollinator Meadow was started with Harts Northeast Wildflower Mix spread over the Grassy Meadow. It is 60% annual and 40% perennial.

MAINTENANCE SCHEDULES
FOR THE LYME TOWN CAMPUS

THE ATTACHED SCHEDULES ARE INTENDED SOLELY AS GUIDES. WEATHER CONDITIONS WILL DETERMINE EXACT SCHEDULE, AND ADJUSTMENTS TO THE SCHEDULE ARE ANTICIPATED. IN NO EVENT SHALL RE-SCHEDULING RELIEVE THE CONTRACTOR FROM HIS OBLIGATIONS HEREUNDER, NOR WILL ADJUSTMENTS TO THE SCHEDULE RESULT IN ANY ADDITIONL CHARGES TO THE OWNER.

MAINTENANCE SCHEDULE FOR LYME TOWN CAMPUS

JANUARY	
• Apply second application of Wilt-Pruf to all broad-leaved evergreens, including Buxus, ilex, leucothoe and skimmias.	
• Cover herbs with pine needles or evergreen boughs to prevent winter burn	
• Clean up gardens. Do not put plant parts with pest infestation or diseases into compost piles.	
FEBRUARY	
No regular maintenance for plant material.	
Notes: Observations about the garden	

MARCH - Weeks 1 & 2	
Trees and Shrubs	
• Prune shrubs requiring maintenance before active growth such as buddleia, clethra and viburnums.	
• Look for any winter damage to trees and prune any trees that require attention.	
• Remove winter mulch from tree saucers and shrubs.	
• Mulch all trees and shrubs with one to two inches of mulch or compost. Do NOT allow any mulch near the root flare of trees	
• Prune suckers at base of amelanchiers and other trees witchhazels, aronias	
Perennials and Groundcovers	
• Check for heaving of plants out of the ground.	
• Check fall blooming plants for heaving out of the ground after frosts	
Bulbs	
• Topdress bulbs with bonemeal or bulb fertilizer as they begin to appear	
• Rake leaves from bulbs as they reach 3"-4" ht to avoid damage due to raking.	
Ornamental Grasses	
• Cut back any large grasses to 6" height	
General	
• Weed control! Dispose of invasive weeds that have set seed. Put into plastic bag.	
• Get soil tested in various areas: lawn, gardens, herb gardens and tree pits	
• Spray over-wintering insects (scale, lacebugs, aphids, mites, gall insects	
• Litter Control: "pick-up-sticks	
Herb Gardens	
• Cut back seed-bearing stalks of large herbs	
Notes and Observations:	

MARCH – Weeks 3 & 4	
Trees, Shrubs and Vines	
• Spray hemlocks with dormant oil spray for wooly adelgid. – Jason Wilcox - arborist	
• Prune back 1/3 of the stems of deciduous shrubs to the ground. Do every third year.	
•	
Perennials and Groundcovers	
• Cut back brown foliage of hellebores, astilbes and hostas	
• Remove dried flower stalks from Astilbes and others.	
Bulbs	
• Topdress bulbs with bonemeal or bulb fertilizer as they begin to emerge.	
Ornamental Grasses	
• Cut back ornamental grasses to height of 6".	
• Check for need to divide grasses. Flag plants that will need dividing in April.	
Lawn	
• Apply lime. East Haddam Horticultural Services	
General	
• Remove excess mulch or leaves from beds.	
• Remove weeds from beds while attending to mulch.	
Notes and Observations:	

APRIL - Weeks 1 & 2	
Trees and Shrubs	
• Keep an eye on the skimmias and protect with wilt-pruf.	
• Apply compost and rose fertilizer to viburnum, clethra, Hamamelis, aronia	
• Feed with Hollytone: ilex, leucothoe, skimmia	
• Prune winter dieback from shrubs and trees as soon as it becomes noticeable	
• Spray all broad-leaved evergreens and arborvitae and hosta with deer repellent	
• Prune leucothoe as specified – See Plant ID Sheet	
Perennials and Groundcovers	
• Remove excess leaf mulch from perennial beds.	
• Divide perennials as needed, such as daylilies, hostas, nepeta, ferns and grasses	
• Cut back or mow winter-damaged groundcovers such as liriope, vinca, or pachysandra	
Bulbs	
• Topdress daffodils and later bulbs with bonemeal as they emerge.	
• Liquid feed bulbs that have blossomed until their leaves turn yellow.	
• Deadhead spent narcissus blossoms on a regular schedule.	
General	
• Pest Control: Spray overwintering insects (scale, lacebugs, aphids, mites, gall insects) with dormant oil.	
• Weed and dispose of weeds in a plastic bag. Do not add any invasive weeds into the compost pile.	
Notes and Observations	

APRIL - Weeks 3 & 4	
Trees and Shrubs	
• Cut back winter-injured stems of shrubs and trees	
• Fertilize shrubs with compost or general balanced fertilizer: Buddleia, Buxus 'Green Velvet and Franklin's Gem' Pinus strobus 'nana' and Clethra.	
• Fertilize with Rose fertilizer: Hamamelis, Viburnum	
• Fertilize with Hollytone: Ilex, leucothoe.	
Perennials and Groundcovers	
• Fertilize with compost or general purpose fertilizer: Astilbes, Helleborus, Hosta, ferns	
• Weed Control – during dry weather, moisten soil first, then weed.	
• Monitor watering – check soaker hoses for amount of water being dispersed.	
Bulbs	
• Fertilize bulbs with liquid fertilizer after they have flowered.	
• Deadhead for visual impact and for storing energy in bulbs.	
General	
• Insect and Disease Control – observe plants and mulch for presence of pests and control	
• Clean Up and Litter Control – "pick up sticks" and weed	
• Remove excess mulch from beds – reuse or put into compost heap	
• Use deer repellent as needed – spot treat plants that are susceptible to deer predation. Also, provide regular applications of Wilt-Pruf to broad-leaved evergreens	
• Weed control: spray weeds with white vinegar in a spray bottle	
Notes and Observations:	

MAY - Weeks 1 & 2	
Trees and Shrubs	
• Apply additional mulch to shrub beds and tree saucers, if required.	
• Fertilize shrubs as specified earlier if not already done	
• Fertilize trees with general balanced fertilizer: Amelanchier, Cercis, oaks, maples	
Perennials and Groundcovers	
• Fertilize as specified if not already done in April	
• Water first and then mulch beds to specified depths	
• Fertilize hellebores after flowering (may be later than this week)	
• Divide & transplant summer and autumn perennials, if desired.	
• Divide & transplant Spring bloomers after flowering	
• Fertilize hellebores after flowering	
• Pinch back or shear spring-flowering perennials to control height. Do again in early June.	
Bulbs	
• Fertilize bulbs after flowering with a mixture of 1 part rock phosphate and 3 parts greensand	
General	
• Insect and Disease Control – spot treat insects and pests before infestation begins	
• Clean Up and Litter Control – Weed!!!! Check for invasive weeds.	
• Use deer repellent as needed. Change brands occasionally.	
• Water Control: monitor soaker hoses; water trees by hand in the morning	
Notes:	
In Blossom:	

MAY - Weeks 3 & 4	
Trees and Shrubs	
• Monitor watering	
• Weed Control – Deposit weeds in compost unless they are dispersing their seeds.	
• Cut back candles of pines by one half (Do not do this for the first year.)	
• Prune watersprouts from trees	
• Fertilize dwarf white pine with compost or Gardentone	
Perennials and Groundcovers	
• Weed Control – Monitor for invasive species and dispose of them in plastic bags	
• Prune groundcover beds with shears or weed whacker or lawn mower & water generously	
• Deadhead early spring flowering perennials	
• Cultivate planting beds for good aeration and reapply mulch.	
• Pinch or cut back summer-flowering perennials as height control	
• Divide spring bloomers after they flower	
• Thin one third of stems of upright plants to provide better air circulation	
Bulbs	
• Liquid fertilize bulbs when bulbs have declined	
• Remove any dying foliage when it separates from the bulb easily.	
General	
• Insect and Disease Control	
• Clean Up and Litter Control	
Notes and Observations:	
In Blossom:	

JUNE – Weeks 1 & 2	
Trees and Shrubs	
• Monitor watering by soaker hose and make any adjustments to volume as required	
•	
•	
• Prune spring-flowering deciduous shrubs after flowering – Spiraea, viburnum, clethra, hamamelis (See Plant ID Sheets) – check soaker hoses for leaks and/or cuts	
Perennials and Groundcovers	
• Deadheading as specified – do not let old flowers remain on stems – pick them off	
• Weed Control – Be alert for invasives such as bindweed and Japanese stilt grass	
• Monitor watering	
• Cut back nepetas and salvias for rebloom in the fall	
Bulbs	
• Remove any remaining dying foliage	
• Fertilize bulbs after flowering with a mixture of 1 part rock phosphate and 3 parts greensand.	
General	
• Insect and Disease Control – Use the Pest Management Page in this manual	
• Clean Up and Litter Control – Work Party Days -	
• Weed Control: continue to weed when soil is friable, not hard and dry.	
Notes and Observations:	

JUNE - Weeks 3 & 4	
Trees and Shrubs	
• Remove any remaining spent flowers from shrubs	
• Remove spent flowers from lilacs – prune with sharp shears.	
• Spray trees with pesticides as needed. – Jason Wilcox	
• Monitor watering by soaker hose and water trees by hand in AM	
Perennials and Groundcovers	
• Deadheading as needed – one of the easiest jobs in the garden	
• Weed Control: Don't compost weeds with seeds ready to burst	
• Pinch back spring-flowering perennials to control height (second time).	
• Pinch back summer and autumn flowering perennials for height control	
Bulbs	
• Remove any remaining dying foliage and dispose into compost heap	
• Fertilize bulbs after flowering with mixture of 1 part rock phosphate and 3 parts greensand.	
General	
• Insect and Disease Control – Keep your eyes open.	
• Clean Up and Litter Control –	
• Keep your hat on and spread sun protection on your skin	
• Bring water to drink	
• Weed Control: spot weed control with white vinegar in spray bottle	
• Use deer repellent as needed	
Notes and Observations:	

JULY - Weeks 1 & 2	
Trees and Shrubs	
• Monitor watering – water deeply. If there's no rain, soak an established garden once a week so water reaches deep to the root zone.	
• Weed Control – Separate common weeds from invasives and dispose of the invasives	
• Prune Spring flowering shrubs before next year's buds set (4-6 weeks after bloom time)	
• Pruning: – Don't do any drastic pruning in July and August	
• Feed these plants in July: Buddleia, roses and heavy bloomers – use natural sources	
Perennials and Groundcovers	
• Deadheading as required on summer blooming perennials. (See Plant ID Sheets)	
• Weed Control – Don't compost weeds with seeds – put them in a plastic bag and dispose of it.	
• Perennials will rebloom in August if you cut them back in July	
• Wait until after mid-August to divide and transplant most perennials.	
• Bearded iris is the only perennial that should be transplanted in July	
• Fall and spring-flowering plants can be divided and transplanted after mid-August.	
• Feed with liquid foliar food every few weeks	
General	
• Insect and Disease Control – Be alert and note signs in this manual	
• Clean Up and Litter Control – See note about weed control above.	
Notes and Observations:	
In Blossom:	

JULY - Weeks 3 & 4	
Trees and Shrubs	
• Monitor watering – continue to monitor soaker hose watering system and by hand	
• Weed control – if soil is dry, sprinkle for about an hour in the AM before weeding	
• Don't do any drastic pruning of trees or shrubs in July and August	
• Fertilize those which need mid-summer fertilizing: Buddleia, all clematis, Kalmia, hydrangea, spiraea, and witchhazel	
Perennials and Groundcovers	
• Fertilize those perennials which need mid-summer fertilizing: water immediately	
• Deadheading as required; cut back flower stalks of hostas gaura, lavender. Tip prune to encourage dense, compact plants	
• Spent blooms of daylilies should be cut down near the base of the plant	
• Weed Control – Weed daily to keep up with it!	
General	
• Insect and Disease Control - watch for groundhog damage	
• Clean Up and Litter Control	
• Use deer repellent as needed – change brands often	
• Mid-summer fertilizing - use natural fertilizers from natural sources	
• When plants appear to be droopy feed lightly with foliar fertilizer	
Notes and Observations:	
In Blossom:	

AUGUST - Weeks 1 & 2	
Trees and Shrubs	
• Monitor tree watering –continue daily as needed – water deeply	
• Weed control – continue to keep tree pits free of weeds and mulch after weeding	
Perennials and Groundcovers	
• Monitor watering in herb garden. Water deeply. If there's no rain, soak established gardens once a week so water reaches to deep root zone.	
• Deadheading as required for neatness or control of seed-sowing	
• Weed Control – look for invasive species and remove them to a plastic bag	
• Remove spent flower stalks to prevent seed-sowing and to clean up the gardens	
General	
• Insect and Disease Control – Keep your eyes open and use the Pest Management information in this manual	
• Clean Up and Litter Control	
• Order bulbs for Fall planting	
• Foliar feed every few weeks in a tough summer	
• Avoid watering in the middle of the day	
Notes and Observations:	
In Blossom:	

AUGUST – Weeks 3 & 4	
Trees and Shrubs	
• Monitor watering – water shrubs by hand in the morning	
• Weed control – Keep at it	
Perennials and Groundcovers	
• Monitor watering – check soaker hoses	
• Deadheading as required	
• Fall and Spring flowering plants can be moved after mid-August	
• Foliar feed your plants with Maine Seafood or Liquid Seaweed every few weeks.	
• If planting or transplanting, provide the transplants with plenty of water and a few days of shade to recuperate	
General	
• Insect and Disease Control – Read parts of the "Insect and Pest Descriptions and Controls	
• Clean Up and Litter Control – do not put weeds with seeds into the compost pile	
• Wear a hat, Sunscreen on your face and neck, arms, etc. – bring drinking water!!!!	
Notes and Observations:	
In Blossom:	

SEPTEMBER - Weeks 1 & 2	
Trees and Shrubs	
• Monitor watering –water broad-leaved and coniferous evergreens deeply before the first frost or once a week if no rain.	
• Shrubs and woody perennials can be fed after leaves have fallen	
• Spray all evergreen trees and broad-leaved evergreen shrubs with deer repellent	
• Note that buddleia, Perovskia, lavender, gaura should NOT be cut back in fall	
• Evergreens exposed to wind should be sprayed with Wilt-Pruf.. Do not apply when ground is dry and plants are water stressed.	
Perennials and Groundcovers	
• Apply limestone to lavender, lilacs etc.	
• Don't feed perennials again until next spring.	
• Monitor watering	
• Remove dead foliage from perennials with hand pruners.	
• Fall is a good time to divide and plant – finish by 11/15	
General	
• Insect and Disease Control - watch for groundhog damage	
• Clean Up and Litter Control	
Notes and Observations:	

SEPTEMBER - Weeks 3 & 4	
Trees and Shrubs	
• Monitor watering – water one inch per week if no rain	
• Weed Control – check for invasive vines, barberries, Japanese stiltgrass – monitor them	
• Plants with woody stems (trees, shrubs, perovskia) can be fed after their leaves have fallen	
Perennials and Groundcovers	
• Weed Control –check garden beds and native areas for invasive vines, barberries, etc.	
• Deadheading as required for visual appeal	
• Monitor watering – especially myrtle	
• Rake leaves from perennial beds as required.	
• Don't feed perennials again until Spring	
• Remove spent seedheads to prevent self-sowing	
• Once the ground freezes, apply a light winter mulch to all garden beds	
General	
• Insect and Disease Control – plants with diseases should be removed and put into a plastic bag and disposed of	
• Clean Up and Litter Control – Keep the ground clean – it will discourage the voles	
Notes and Observations:	
In Blossom:	

OCTOBER - Weeks 1 & 2 Prepare Garden for Winter	
Trees and Shrubs	
• Monitor watering water one inch per week if no rain – deep water before ground freezes	
• Weed control – last chance	
• Prune suckers at base of trees for last time of the year – birch and amelanchiers.	
• Topdress beds with winter mulch.	
• Protect evergreens with Wilt-Pruf – once in November and again in January when the temperature is above 40 degrees.	
•	
Perennials and Groundcovers	
• Weed Control – last chance	
• Deadheading as required	
• Monitor watering with soaker hoses	
• Apply handful of lime around base of lavenders	
General	
• Insect and Disease Control – refer to Insect and Pest Descriptions and Controls in this Manual	
• Clean Up and Litter Control	
• Leaf Control	
Bulbs:	
• Plant bulbs.	
Notes and Observations:	

OCTOBER - Weeks 3 & 4 Prepare Garden for Winter	
Trees and Shrubs	
• Monitor watering - water one inch per week if no rain	
• Weed control	
• Remove lilac suckers.	
• Spray broad-leaved evergreens with deer repellent and Wilt-Pruf (when temperature is above 40 degrees	
Perennials and Groundcovers	
• Let perennial leaves remain on plants as long as they are still green	
• Deadheading as needed – cut perennials back to the base before mulching	
• Divide perennials that need it.	
• Cut back the following perennials:	
• Keep plants watered until ground is frozen.	
General	
• Insect and Disease Control	
• Clean Up and Litter Control	
• Leaf Control	
Bulbs:	
• Continue to plant bulbs.	
Notes and Observations:	
In Blossom:	

NOVEMBER - Weeks 1 & 2	
Trees and Shrubs	
• Monitor watering: water one inch per week if no rain	
• Renew mulch to winter depth – one to two inches	
• Spray broad-leaved evergreens with Wilt-Pruf when temp is above 40 degrees	
• Cut back abnormally long shoots of buddleia by one third	
Perennials and Groundcovers	
• Weed Control	
• Renew mulch to specified depth	
• Cut back perennials as specified as their leaves turn yellow and brown	
• Monitor watering, especially myrtle	
General	
• Insect and Disease control	
• Clean Up and Litter Control	
• Leaf Control	
Bulbs:	
•	
•	
Notes:	
In Blossom:	

NOVEMBER - Weeks 3 & 4	
Trees and Shrubs	
• Monitor watering: water one inch per week if no rain	
• Renew mulch to specified depth, if not already done	
• Fertilize with lime: lilacs	
Perennials	
• Complete cutting back perennials.	
• Complete raking and weeding.	
• Fertilize with lime: baby's breath, campanulas, clematis, delphinium, dianthus, candytuft, German and bearded iris, lavender, scabiosa	
General	
• Insect and Disease control	
• Clean Up and Litter Control	
• Leaf Control	
• Shut down hand watering system unless weather is unseasonably warm	
Bulbs:	
• Complete bulb planting	
DECEMBER	
General:	
• Apply pesticides for winter control of dormant pests.	
• Cut greens for Christmas decorations , if available.	
• Monitor all plants for deer predation and general health	

Botanical Name
AMELANCHIER CANADENSIS

Key to Plan:
AC

Common Name
SHADBLOW

Form

Flower

BOTANICAL CHARACTERISTICS: A small native, deciduous, ornamental tree with upright branches and erect plumes of white flowers in April, shiny, black, bird-attracting fruit in late summer thru fall and golden yellow to orange-red foliage in the fall.

DESIGN INTENT: Upright specimen accent on either side of the vehicle entrance; spring and fall color.

PRUNING: To maintain a tree-like appearance, cut away suckers that arise from the stem base at least once a year.

FERTILIZING: Feed with Gardentone in mid-spring.

SUSCEPTIBLE DISEASES and INSECTS: None

OTHER MAINTENANCE: Until the tree is very well established (five to seven years), mulch in fall and spring. Thereafter, fallen leaves may be used as mulch. Cut back any branches that have been accidentally damaged.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
ARONIA ARBUTIFOLIA BRILLIANTISSIMA

Key to Plan:
AAB

Common Name
RED CHOKEBERRY

Flower

Fruit

BOTANICAL CHARACTERISTICS: An upright –growing native deciduous shrub with white flowers in May followed by bright red persistent berries in the fall. Shiny, dark green leaves turn a brilliant red in the fall.

DESIGN INTENT: Accent plant in NE corner of Town Hall, at the corner of the Library Entry Garden. Berries attract birds.

PRUNING: Head back lightly to encourage lateral growth.
Do NOT remove suckers unless they are too far from the plant.
Do pruning as soon as berries drop.

FERTILIZING: Apply compost every year in mid-spring.

SUSCEPTIBLE DISEASES and INSECTS: None at time of writing.

OTHER MAINTENANCE: Mulch in Spring and Fall.
Water heavily in late Fall before first bad frost.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
BUXUS 'GREEN VELVET'

Key to Plan:
BGV

Common Name
GREEN VELVET BOXWOOD

Form

Habit

BOTANICAL CHARACTERISTICS: A small broad-leaved evergreen shrub with small dark green leaves. It is very hardy and has good retention of green color in the winter.

DESIGN INTENT: A loose hedge in front of the Library and above low wall in front of the Town Hall.

PRUNING: None necessary. Any brown leaves or twigs can be individually pruned in early spring.

FERTILIZING: Apply a general-purpose fertilizer, such as Gardentone by Espoma, in the spring.

SUSCEPTIBLE DISEASES and INSECTS:

Sap-sucking box sucker	Root rot
Aphids	Mealy bugs
Canker	Boxwood leaf miner
Boxwood mites	Blight leaf spots

OTHER MAINTENANCE: Apply Wilt-pruf in November and January, following instructions on label.
Do not cultivate near roots.
Water thoroughly in late fall before ground freezes.
Protect from snow damage by brushing snow off of plants ASAP.
Shrubs can be wrapped in burlap during any or all of the winter months. It will prevent sun damage.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
BUXUS 'FRANKLIN'S GEM'

Key to Plan:
BFG

Common Name
FRANKLIN'S GEM BOXWOOD

Form

Habit

BOTANICAL CHARACTERISTICS: A small slow-growing, fine-textured rounded evergreen requiring minimal maintenance, but still tolerates shearing. It has bright green glossy foliage and is one of the hardiest boxwoods. The leaves turn slightly to a rich olive color during the winter months.

DESIGN INTENT: A loose hedge in front of the Town Hall above the walls.

PRUNING: None necessary. Any brown leaves or twigs can be individually pruned in early spring.

FERTILIZING: Apply fertilizer for ericaceous plants, such as Hollytone by Espoma, in the spring.

SUSCEPTIBLE DISEASES and INSECTS:

- Root rot
- Mealy bugs
- Boxwood leaf miner
- Blight leaf spots
- Aphids
- Canker
- Boxwood mites

OTHER MAINTENANCE: Apply Wilt-pruf in November and January, following instructions on label.
Do not cultivate near roots.
Water thoroughly in late fall before ground freezes.
Protect from snow damage by brushing snow off of plants ASAP.
Shrubs can be wrapped in burlap during any or all of the winter months to prevent sun damage.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
CERCIS CANADENSIS

Key to Plan:
CC

Common Name
REDBUD

Habit in Flower

Flower

BOTANICAL CHARACTERISTICS: A small, spreading ornamental tree with a flat to rounded crown. Dark green leaves are large and heart-shaped. Flowers are reddish-purple in bud, opening to a rosy pink with a purplish tinge. Flowers open in April/May and are effective for 3 weeks.

DESIGN INTENT: Ornamental tree in front of the library.

PRUNING: Prune out deadwood as required.

FERTILIZING: Feed with balanced general purpose fertilizer (Gardentone) in mid-Spring.

SUSCEPTIBLE DISEASES and INSECTS:

Canker	Caterpillars
Leaf spot	Scale
Verticillium wilt	Treehoppers

OTHER MAINTENANCE: Mulch once a year.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
CLETHRA ALNIFOLIA 'CHRYSTLINA'

Key to Plan:
CAC

Common Name
CHRYSTALINA SUMMERSWEET

Habit in flower

Flower

BOTANICAL CHARACTERISTICS: A dense small deciduous shrub of 2.5 to 3 feet tall by 3-4' wide with an oval outline, often suckering to form broad colonies. Foliage color is deep green in summer and pale yellow to rich golden brown in Fall. Pure white, incredibly fragrant flowers appear during July and August and the plant tolerates sun, partial sun and shade.
DESIGN INTENT: Full deciduous shrubs that produces a short mounding hedge.

PRUNING: Prune in March to keep plant in bounds within design intent.

FERTILIZING: Fertilize with general balanced fertilizer in mid-spring.

SUSCEPTIBLE DISEASES and INSECTS: mites
otherwise pest free

OTHER MAINTENANCE: Late to leaf out in spring—don't panic!.
Mulch with organic matter in natural situation, shredded bark in garden beds.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
ILEX GLABRA 'SHAMROCK'

Key to Plan:
IGS

Common Name
SHAMROCK INKBERRY

Form

Foliage

BOTANICAL CHARACTERISTICS: A broad-leaved evergreen shrub of four feet height and three to four feet width with lustrous dark green foliage. Insignificant black berries in late Fall.

DESIGN INTENT: Winter interest in plantings which are visible from Town Hall offices. Deer resistant.

PRUNING: None required except removing occasional winter-injured stems.

FERTILIZING: Feed with Hollytone in mid-spring.

SUSCEPTIBLE DISEASES and INSECTS: None.

OTHER MAINTENANCE: Mulch in fall and spring.
Spray with Wilt-pruf in late November and January. Follow directions on product.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
LEUCOTHOE A. 'RAINBOW'

Key to Plan:
LR

Common Name
RAINBOW LEUCOTHOE

Foliage

Leaf—Winter

BOTANICAL CHARACTERISTICS: A broad-leaved evergreen shrub with graceful arching branches almost fountain-like in appearance. Leaves are long and pointed with a lustrous white, pink and green mottled appearance. Slow-growing and deer-resistant. Drooping clusters of small creamy flowers appear May through June and are quite fragrant. Evergreen foliage turns to purplish bronze throughout the wint
DESIGN INTENT: Interesting foliage through out year.

PRUNING: Remove one third of oldest stems to ground level each spring on established plants to encourage growth of new clean foliage.

FERTILIZING: Feed with Hollytone in early spring.

SUSCEPTIBLE DISEASES and INSECTS: Leaf spot

OTHER MAINTENANCE: Spray with Wilt-pruf in late November and January.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme , Connecticut

Botanical Name
PINUS STROBUS 'SOFT TOUCH'

Key to Plan:
PSST

Common Name
SOFT TOUCH DWARF WHITE PINE

Form

Needles and Cones

BOTANICAL CHARACTERISTICS: A dwarf needled evergreen shrub with blue-green needles on a bushy, irregular dwarf shape.

DESIGN INTENT: Accent plant on either side of library entrance.

PRUNING: Can be pruned in spring by cutting back by one half the central buds, or "candles" after they start growing. This will keep the plant compact.

FERTILIZING: Feed with a general-purpose fertilizer (such as Planttone or Gardentone by Espoma) in the spring.

SUSCEPTIBLE DISEASES and INSECTS:

Pine sawfly
Pine needle scale
Pine web worm

OTHER MAINTENANCE: If it doesn't rain at least one inch per week, water by hand until the ground freezes.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
VIBURNUM 'WINTERTHUR'

Key to Plan:
VW

Common Name
WINTERTHUR VIBURNUM

Habit in flower

Leaf and fruit

BOTANICAL CHARACTERISTICS: A deciduous shrub with a rounded form to six feet height with white flowers, 2-3" in diameter which cover the plant in June. Pink berries form in late summer, turn blue with the cool weather and are held all winter. The lustrous green leaves turn to a mahogany red in the fall.

DESIGN INTENT: Accent shrub at the NE corner of Town Hall.

PRUNING: After four to five years, remove one third of the oldest flowering growth to the base of the plant in the February or March. Prune thusly every three years thereafter.

FERTILIZING: Apply rose fertilizer every year in early spring.

SUSCEPTIBLE DISEASES and INSECTS:

- aphids
- scale
- japanese beetles
- powdery mildew
- leaf spot
- anthracnose
- crown gall

OTHER MAINTENANCE: Mulch in Spring and Fall.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Center
Lyme, Connecticut

Botanical Name
ALCHEMILLA MOLLIS

Key to Plan:
am

Common Name
LADY'S MANTLE

Flower

Foliage

BOTANICAL CHARACTERISTICS: A low-growing mounding perennial with yellowish-green or chartreuse flowers in June and July on 18" stems. The palmately-lobed 3-4" wide leaves are handsome throughout the season. They are somewhat hairy and rounded and the lobes are creased like the folds of a fan.

DESIGN INTENT: Front of herb garden. Do not shear face of the plant, but allow stems and flowers to fall over edge of bed.

PRUNING: Remove spent flower stalks to base before setting seed.
Remove dead or damaged leaves as needed.
Shear to new basal growth late in summer.
Do NOT cut back in Autumn.

FERTILIZING: In mid-Spring with general balanced fertilizer with high phosphorus content.

SUSCEPTIBLE DISEASES and INSECTS: None serious at time of writing.

OTHER MAINTENANCE: Divide in Spring and Autumn every 6 – 10 years.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
ASTILBE X ARENDSII 'SNOWRIFT'

Key to Plan
aaS:

Common Name
SNOWDRIFT ASTILBE

Habit and Flower

Flower

BOTANICAL CHARACTERISTICS: A clump-forming perennial with basal foliage and white flowers in tapering plumy panicles held above foliage on slender stems.

DESIGN INTENT: Lightness in Entry Garden.

PRUNING: DO NOT deadhead spent blossoms.
Deadleaf plants to keep plants neat.
DO NOT cut back for Winter, but prune early in Spring.

FERTILIZING: Feed with balanced, general-purpose fertilizer in mid-Spring and mid-Summer.

SUSCEPTIBLE DISEASES and INSECTS: None.

OTHER MAINTENANCE: Mulch in Spring and Fall.
Water during drought.
Disturb and divide as INFREQUENTLY as possible.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
BORAGO OFFICINALIS

Key to Plan:
bo

Common Name
STARFLOWER

Habit

Flower

BOTANICAL CHARACTERISTICS: Annual herb that grows to a height of two to three feet. Flowers are showy, open racemes of drooping, star-shaped bright blue flowers. They bloom from June through August. Stems and leaves are hairy and bristly. Leaves are alternate and simple. Can tolerate moderate-to-severe drought.

DESIGN INTENT: Background plant in herb garden.

PRUNING: No information yet.

FERTILIZING: Do not use commercial fertilizer.
A small quantity of sand and compost can be spread around the base of the plants in summer.
Add a sprinkling of lime around each plant in early spring.

SUSCEPTIBLE DISEASES and INSECTS: No serious insect or disease problems at time of writing.
Powdery mildew can appear.

OTHER MAINTENANCE: Mulch with buckwheat hulls. Water lightly after applying mulch.
Deer and drought tolerant.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
GAURA L. 'SNOW FOUNTAIN'

Key to Plan:
glSF

Common Name
STARFLOWER

Habit

Flowers

BOTANICAL CHARACTERISTICS: Hardy perennial with airy habit growing 24"-30", sometimes reaching to 4 feet. Foliage is green to rose-hued pink, lined with delicate open 5-petaled fragrant flowers with long prominent anthers. Blush pink buds opening to white flowers appearing in early summer. Plants grow in clumps and have a taproot which makes them tolerant of drought. This arching airy plant is also a repeat bloomer.

DESIGN INTENT: A "blender" in the composition of the herb garden. Attracts butterflies and bees. Adds motion to the garden.

PRUNING: Remove spent flower stalks to prevent self-sowing and extend flowering.
Late spring pruning keeps plant in bounds. Cut the plant to one half its size.
Deadhead throughout the summer. Cut back by 1/3 after the first flush of new flowers is over.
Remove developing seed pods to prevent self-sowing.

FERTILIZING: None necessary.
Avoid using compost or organic matter. Add sand to lighten the soil if needed.
Sprinkle lime around each plant.

SUSCEPTIBLE DISEASES and INSECTS:

Spittlebugs	4-lined plant bugs	Leafhoppers
Japanese Beetles	2-spotted spider mites	Aphids
Fleahoppers	Thrips	Root Rot
Rust	Mildews	Tarnished Plant Bugs

Use insecticidal soap at first seeing of any insects listed above.

OTHER MAINTENANCE: Never needs dividing.

Sarah Wood McCracken, Landscape Architect
Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
HELLEBORUS 'ROYAL HERITAGE'

Key to Plan:
hoRH

Common Name
ROYAL HERITAGE HELLBORES

Flower

Habit and Flower

BOTANICAL CHARACTERISTICS: A vigorous perennial with dark evergreen foliage and a long flowering period. Flower colors range from white to deep red from February through May. Foliage turns bronzy in winter.
DESIGN INTENT: Winter and early spring bloom and good evergreen foliage. Placed at the entries of both Library and Town Hall to show off winter flowers.

PRUNING: Do not cut back in fall or winter. Prune off dead leaves to the base of the stem in late winter to make room for new growth.

FERTILIZING: Feed with Gardentone in spring after blooming.

SUSCEPTIBLE DISEASES and INSECTS: Leaf spot

OTHER MAINTENANCE: If soil is extremely acid apply lime yearly.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
HYSSOPUS OFFICINALIS

Key to Plan:
ho

Common Name
HYSSOP

Flowers

Form

BOTANICAL CHARACTERISTICS: Brightly colored sub-shrub herb that ranges from 12"-24" in height. Stems are woody at the base from which grow a number of straight, upright branches. Leaves are lanceolate, dark green and less than 1" long. From July to September the plant produces bunches of pink, blue or white fragrant flowers. Attracts bees, butterflies and hummingbirds. It is resistant to drought and tolerant of dry sandy soils. It has both medicinal and culinary uses.
DESIGN INTENT: Mid-ground of the herb gardens.

PRUNING: Do not prune in fall.
Cut plants to the ground in spring.
Trim during growing season to maintain manicured look.

FERTILIZING: None required.

SUSCEPTIBLE DISEASES and INSECTS: Nematodes

OTHER MAINTENANCE: Thrives in full sun and warm climes.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
LAVANDULA 'BLUE CUSHION'

Key to Plan:
IBC

Common Name
BLUE CUSHION LAVENDER

Habit

Flower

BOTANICAL CHARACTERISTICS: A strongly aromatic dwarf shrub growing to 12 to 15 inches. Leaves are evergreen and flowers are pinkish purple, produced on spikes 1-3 inches long at the tops of leafless stems which can reach ten to twelve inches. The flower spike emerges before the petals emerge. Flowers consist of purple calyxes and light brown flower bracts. It is tolerant of drought, low temperatures, and acid soils although it prefers neutral to alkaline soil.

DESIGN INTENT: These very fragrant flowers are placed at the front of the herb garden.

PRUNING: Stems should be trimmed before they get long or floppy.
Cut off tips often to encourage branching and growth that is dense and compact.
Control aggressive growth with light pruning often.

FERTILIZING: Add a sprinkling of lime around each plant in spring.

SUSCEPTIBLE DISEASES and INSECTS:

Downy mildew	Phomopsis	Septaria Leaf Spot
Bacterial Blight	Anthracnose	

OTHER MAINTENANCE: Weed after soaking rain to control unwanted weeds.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
LAVANDULA A. 'HIDCOTE'

Key to Plan:
lH

Common Name
HIDCOTE LAVENDER

Habit

Hedge in Flower

BOTANICAL CHARACTERISTICS: A strongly aromatic dwarf shrub growing to 15 to 18 inches. A dense full plant with fragrant, deep purple flowers and grayish-green fragrant foliage. The flowers bloom from July to September. The flower spike emerges before the petals emerge. Flowers consist of purple calyxes and light brown flower bracts. It is tolerant of drought, low temperatures, and acid soils although it prefers neutral to alkaline soil.

DESIGN INTENT: These very fragrant flowers are placed at the front of the herb garden.

PRUNING: Stems should be trimmed before they get long or floppy.
Cut off tips often to encourage branching and growth that is dense and compact.
Control aggressive growth with light pruning often.

FERTILIZING: Add a sprinkling of lime around each plant in spring.

SUSCEPTIBLE DISEASES and INSECTS:

Downy mildew	Phomopsis	Septaria Leaf Spot
Bacterial Blight	Anthracnose	

OTHER MAINTENANCE: Weed after soaking rain to control unwanted weeds.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
NEPETA MUSSINI 'WALKER'S LOW'

Key to Plan:
nmWL

Common Name
WALKER'S LOW CATMINT

Flower

Form and Flower

BOTANICAL CHARACTERISTICS: This variety is not low-growing but upright and wide. The gray-green foliage forms a low-growing mound and is covered with soft, lavender-blue flowers in summer. It's a prolific bloomer and very drought tolerant. Height and spread is about 30" each. This variety of nepeta is sterile so re-seeding does not occur. Very drought and heat tolerant.

DESIGN INTENT: Massing on a small scale in the Herb Gardens.

PRUNING: It can be sheared and shaped after flowering to force a second flush of blooms.
Cut back to soil level in Fall.
Pruning after several killing frosts is advisable.

FERTILIZING: General balanced fertilizer in mid-Spring

SUSCEPTIBLE DISEASES and INSECTS: None at this writing

OTHER MAINTENANCE: Divide in early Spring or early Fall when necessary
Mulch in Spring and Fall with buckwheat hulls.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
ORIGANUM VULGARE 'AUREUM'

Key to Plan:
ovA

Common Name
GOLDEN MARJORAM

Foliage

Flower

BOTANICAL CHARACTERISTICS: **A robust perennial creeper with tiny golden yellow foliage. Pink to lavender flowers stand above the foliage in early to late summer. The small leaves hold their golden hue even in cold weather. The foliage is attractive to butterflies. It is both deer resistant and drought tolerant and is one of the best butterfly nectar flowers. Takes foot traffic well.**

DESIGN INTENT: **Front of the border bright gold color to complement the blues and lavenders in the garden.**

PRUNING: **Cut back old flower stems in early spring.**
Clip plants back hard in June to maintain low, creeping habit.
Cut back to about one inch twice a year.

FERTILIZING: **Sprinkle lime around the plants in mid-Spring.**

SUSCEPTIBLE DISEASES and INSECTS: **Root rot** **Spider Mites** **Leaf hoppers**
Aphids

OTHER MAINTENANCE: **Divide in spring or take basal cuttings in late spring.**

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
PEROVSKIA A. 'LITTLE SPIRE'

Key to Plan:
paF

Common Name
LITTLE SPIRE RUSSIAN

Form en masse

Flower

BOTANICAL CHARACTERISTICS: A woody perennial with a height of two to three feet and a spread of two to three feet with finely textured gray foliage. Flowers are held in long spikes of light bluish-purple in late summer through fall. It is drought, rabbit and deer resistant. Attracts bees. Flowers are fragrant.

DESIGN INTENT: Background of herb garden.

PRUNING: Do not cut back in fall as silvery stems and seed heads provide winter interest.
Cut back to soil level in spring after new growth appears..
Any early blooming stems can be cut back by two-thirds to encourage an autumn bloom.

FERTILIZING: Feed with Gardentone in mid-spring and mid-summer.

SUSCEPTIBLE DISEASES and INSECTS: No serious insect or disease problems at time of writing.

OTHER MAINTENANCE: Mulch in spring and fall with buckwheat hulls.
Plants can be pinched or cut back by one-half when they reach 12" height to obtain fuller plants.
Needs only occasional watering.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Center
Lyme, Connecticut

Botanical Name
RUTA GRAVEOLENS

Key to Plan:
rgJB

Common Name
JACKMAN'S BLUE RUE

Foliage and Form

Flower

BOTANICAL CHARACTERISTICS: A hardy evergreen, shrubby herb with a height of 2-3 feet and a spread of 2-3 feet also. Blue gray leaves are alternate Stems are woody in the lower parts. Yellow flowers are arranged in terminal panicles blossoming from June to September. The fruit is a brown capsule which self-sows. It is both deer and drought tolerant.

DESIGN INTENT: Background of Herb Gardens.

PRUNING: Prune back plants to old wood in early spring after new growth appears.
Remove brown seed capsules if you do not want multiple offspring.

FERTILIZING: None required.

SUSCEPTIBLE DISEASES and INSECTS: Root rot may occur in poorly drained soils.
No serious insect or disease problems.
Caterpillars of the Papilio butterflies feed on foliage.

OTHER MAINTENANCE: Winter mulch suggested.
Handling plants with milky substance in the stems may cause dermititus.
Use gloves when handling.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
SALVIA N. 'SNOW HILL'

Key to Plan:
snSH

Common Name
SNOW HILL WHITE SALVIA

Habit in Flower

Flower

BOTANICAL CHARACTERISTICS: A perennial sage with clear snowy white spires of flowers and gray green foliage. It is a long bloomer from spring through summer. Height is 18" and spread is about 24". Flowers attract butterflies. It is both deer resistant and drought tolerant. The foliage is aromatic, especially when crushed.

DESIGN INTENT: The white flowers which spread through the garden are "blenders" among the purples, blues and yellows.

PRUNING: In the summer trim off dead flower heads to encourage new foliage and repeat blooms. Cut back to basal foliage.
Do not trim flower heads too low, however, as they will not rejuvenate late in the season.
A light snipping of the topmost leaves is usually plenty.
In Fall, cut away woody or dead stems around the base of the plants.
Prune back for winter well ahead of the first frost .

FERTILIZING: None required.

SUSCEPTIBLE DISEASES and INSECTS: None serious at writing.

OTHER MAINTENANCE: Low water needs. Does not like moist soil. Check drainage.
Mulch in spring and autumn with buckwheat hulls.
Requires little care once established.
Plants can be divided in Spring or Fall.
Protect with evergreen boughs over the winter.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
SATUREJA MONTANA

Key to Plan:
sm

Common Name
Winter Savory

Foliage and Flower

Flower

BOTANICAL CHARACTERISTICS: Semi-evergreen perennial herb growing to 16" with a spread of 9 to 12 inches. Leaves are opposite. It blooms from July to October in lavender and white. It goes dormant in winter in temperate climates and puts out new leaves on the bare stems in the spring. It has a low, bunching habit. It has many culinary and medicinal uses.

DESIGN INTENT: Foreground of herb garden.

PRUNING: Do NOT cut back when the plant is dormant—it will leaf out in early Spring..

FERTILIZING: A sprinkling of lime in early spring.

SUSCEPTIBLE DISEASES and INSECTS: Its aromatic scent repels harmful insects and pests
Attracts bees and other pollinators.
No harmful pests and insects at time of writing.

OTHER MAINTENANCE: None at time of writing.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

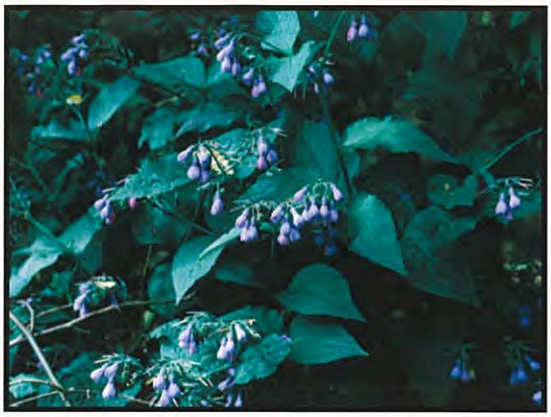
Lyme Town Campus
Lyme, Connecticut

Botanical Name
SYMPHYTUM OFFICINALE

Key to Plan:
so

Common Name
COMFREY

Structure



Flowers

BOTANICAL CHARACTERISTICS: Perennial herb is upright and erect with a spread of 2 feet . It is a large coarse, tuberous-rooted clumping perennial. Basal leaves are large, pointed and hairy. Upper leaves are decurrent and smaller than the basal leaves which grow to 8" long. White to bluish-purple flowers are tubular and appear in drooping clusters from May to July. Deer resistant and drought tolerant.

DESIGN INTENT: Large specimen at back of herb border

PRUNING: Cut back stems promptly after flowering to encourage re-bloom.

FERTILIZING: None necessary.

SUSCEPTIBLE DISEASES and INSECTS: No serious insect or disease problems.

OTHER MAINTENANCE: Tolerates damp, dappled semi-shade.
Root system is deep and difficult to eradicate. Small segments of root left in the soil can produce new plants. Take care digging in the vicinity of comfrey.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut

Botanical Name
VINCA MINOR

Key to Plan:
vm

Common Name
MYRTLE

Habit in flower

Flower

BOTANICAL CHARACTERISTICS: A low, broad-leaved evergreen groundcover forming a 3-6" height mat. Leaves are lustrous dark green. Lilac-blue 1" flowers appear in March and April and sporadically over a long period.

DESIGN INTENT: Groundcover in front beds at Lyme Town Hall.

PRUNING: None required.
May be cut back to 2-3" in early Spring every two to three years to promote bushy growth.

FERTILIZING: None required.
May be fed with potash-rich fertilizer in early spring.

SUSCEPTIBLE DISEASES and INSECTS:

- blight
- canker
- dieback
- leaf spots
- root rot

OTHER MAINTENANCE: Water well until established and thereafter during drought.
Do not overwater.

Sarah Wood McCracken, Landscape Architect
172-2 Brush Hill Road Lyme, CT 06371 860-434-0865

Lyme Town Campus
Lyme, Connecticut