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By Darlene Brady at 12:17 pm, Feb 09, 2023

TOWN OF KENT
Conservation Commission
Regular Meeting Minutes
Wednesday, February 8, 2023 @ 6:30pm

In attendance:
Liddy Baker
Mike Benjamin
Melissa Cherniske
Carol Franken
Connie Manes
Wendy Murphy
Jos Spelbos
First Selectman Jean Speck

Members of the Public Attending: Bruce Bennett

Call to order

A quorum being present, Commission Chair Connie Manes called the meeting to order at 6:35 pm.

1. Accept/Amend Agenda. Two additions were made to the agenda: 1. The addition under New Business of 6C: Housatonic Herbicide Working Group, and 2. Under New Business 6B. Legislative Watch List, the addition of the Bottle Bill to the list of watched legislation. Upon a motion by Melissa Cherniske seconded by Wendy Murphy, the Commissioners voted unanimously to accept the agenda as amended.
2. Accept/amend minutes of Regular Meeting January 11, 2023. The minutes were amended at the end to clarify that the next meeting following January 11th would be February 8, 2023. Upon a motion by Melissa seconded by Wendy, the minutes of the January 11, 2023 Regular Meeting, the above amendment included, were unanimously approved.

At this point the Commission discussed item 6C. Housatonic Herbicide Working Group.

6C. The Commission welcomed Bruce Bennett, Kent's Tree Warden, before the Commission as a representative of the Housatonic Herbicide Working Group, a group of citizens from towns through which the Housatonic Railroad Company's rails and state leased right of way (ROW) passes. The Group is concerned about the Railroad's ROW maintenance practices, which include the application of herbicides. Specifically, the Group says herbicides are overused, and applies herbicides indiscriminately in ways which are harmful to plant, wildlife, and human community areas within the area of the ROW. The Group determined that while the State of Massachusetts has laws which regulate the use of herbicides in sensitive areas, the State of Connecticut's laws and regulations permit the Railroad to use herbicides as they have been doing. The Railroad consequently employs different management practices in Massachusetts than it does in our Connecticut railroad corridor towns.

The Group is appealing to municipal leaders for their support in asking the Railroad to use the same practices in Connecticut that they do in Massachusetts. The Group has prepared a map of the rail corridor showing where wetlands, watercourses, and areas marked on Connecticut's Natural Diversity Database

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(NDDDB) overlap with the ROW. If the Railroad is unwilling to do this the Group plans to work with Connecticut legislators to enact protective restrictions on herbicide use in sensitive areas of the ROW. Bruce said that Rep. Maria Horn and Sen. Bruce Harding are aware of the Group's effort and concerns.

The Commission asked questions and discussed its support of the Group's effort. **Bruce will send the Commission written information including a copy of the map, as well as a template support letter which the Commission can use. The Commission plans to revisit this discussion and act on a letter of support at its March 8th meeting. Wendy volunteered to join the Group as a representative from the Town of Kent.**

The Commission thanked Bruce Bennett and he left the meeting. The Commission next returned to item 4 on the agenda, pending Treasurer Liddy Baker's arrival to the meeting.

4. Public Comment. No members of the public were present at the meeting.

5. Old Business.

Discussion items

A. Kent Municipal Open Space Acquisition. Connie attended the Board of Selectmen's meeting on January 25th to present the Commission's letter request. Pursuant to the request the Board of Selectmen recognized the Commission as the lead Town agency for coordinating open space preservation efforts. The Board of Selectmen did not feel they had enough information to join with the Commission in working with the Board of Finance to establish a land acquisition fund. Connie requested to appear before the Board at its next meeting to present information about prior work by Kent leaders to establish such a fund. This meeting will be on February 22nd.

B. POCD. Jos Spelbos reviewed Sections 4.1 and 4.3 of the POCD, as summarized in the Digest document shared on Google.

4.1. Maintain/Enhance Kent Village Center. Within this section the Conservation Commission is recommended to implement a program to plant street trees within the Village Center. First Selectman Jean Speck spoke about her recent meeting with Bruce Bennett in his capacity as Tree Warden, during which she told him of one town's practice of planting a tree whenever any existing tree is removed by the town. The Commission endorsed this idea. Jos spoke about his recent meeting with faculty at Kent Center School about 2023's Arbor Day activities, and the School's continued willingness to participate in tree planting offsite of school grounds. **Jos will survey the Village Center to identify locations where street tree plantings would be of benefit.**

4.3. Guide Residential Development. The recommendations in this section are all "assigned" to the Planning & Zoning Commission. Several involve review of regulations involving conservation matters, however, including regulations proposing to balance density with reserved open space, and development impacts to Kent's environment. Jos' summarized recommendations in Kent's Affordable Housing Plan, incorporated by reference in the POCD, including the recommendation that town groups partner with land trusts to explore how housing needs can be met. Connie reported that she attended an all-day summit last week focused on land trusts and affordable housing and sponsored by the Connecticut Land Conservation Council, to which she invited all members of Kent's recent subcommittee for the Affordable Housing Plan; Justin Potter of Kent Affordable Housing attended with her. Wendy reported that she had a conversation with Justin during which he voiced his support for the use of renewable energy modalities in the design of new and remodeled affordable housing in Kent.

At this point the Commission returned to item 3 on the agenda.

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3. Treasurer's Report. Liddy Baker reported there had been one expense since the last meeting, in the category of Conferences and Events. The Commission discussed preparations underway of Kent's fiscal year 2023-2024 budget. At this time the Commission's budget is submitted with the same amounts and categories as the current year. The Commissioners agreed this is likely sufficient. Connie mentioned a Cost of Community Services Study, Buildout Analysis, and Fiscal Impact Projection prepared for the Town of Colchester in conjunction with that town's work towards a land acquisition fund and suggested that the Commission may wish to obtain a similar study, prepared with professional assistance. **Connie will send the example from Colchester to the Commission for their reference and later discussion.**

5. Old Business

Discussion items

- C. Sustainable Materials Management in Kent. Jean reported on the new drinks containers eligible for redemption. **She has a list of eligible containers and will forward it to the Commission for their personal use and possible publication while producers adjust their packaging to reflect redemption eligibility.** It is noted that all properly-rinsed glass, aluminum, and plastic drinks containers continue to be recyclable, with or without redemption.

Jean reported that HRRA has applied for grant funding to pilot a Unit Based Pricing program at Kent's Transfer Station. The program would include separate collection of organic waste. Diverting organic waste from household waste lessens the expense to households using Unit Based Pricing, as well as the expense to the town and to haulers and processors of the waste, all while mitigating negative impact to the environment – a quadruple bottom line. Jean does not know when she can expect to hear about the grant and what the timeline is for implementation.

Updates (as needed):

- D. Green Energy Task Force. Wendy is still looking for additional members to join this Task Force. She continues to concentrate on exploring solar opportunities for the town and in particular is focusing on large buildings to maximize impact and return on investment.
- E. Sustainable CT. Jean continues to work to build Kent's capacity to make application for certification at the bronze level.
6. New Business.
- A. KCS Tree Maintenance. Jos surveyed the trees and plantings surrounding Kent Center School. Some trees are in need of pruning. Jos offered to do the work, which he estimates will take about 2 hours, for \$100. Jos also observed that three shrubs planted in the School's Outdoor Classroom have died and need replacing. Melissa reached out to Kent Greenhouse and Gardens for pricing to replace the shrubs. The Commission then tabled this discussion until the end of the meeting so that further discussion and a vote could be taken following Jos' recusal.

B. Legislative Watch list:

[Proposed HB 5278 - Increasing List of Invasive Plants Prohibited from Sale in CT](#)
[SB 73 Requiring Local Representation on Siting Council](#)
[SB896 DEEP and Tree Removal in State Parks](#)
[HB6481 Prohibiting Release of Certain Balloons](#)
[HB 6482 Raising the Bonding Limit to 25K for Greenways Bikeways and Rec Trails](#)
[HB 6483 Enabling Bonding for State Open Space \(OSWA\) - 10M](#)
[HB 6485 Authorizing Green Burial Companies to Receive Open Space Funds](#)
[HB 6486 EPR for Tires](#)

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Bottle Bill - The Commission discussed a situation developing with Connecticut's legislation which last year expanded the redemption of drinks containers, threatening to undo some of the progress made. Rep. Maria Horn is involved and the Connecticut League of Conservation Voters put out an alert asking for community support, which Melissa shared to the Commission's Facebook page. Jean reported that there are at least three proposed bills involving drinks container redemption. We will continue to follow the situation.

Jean reported on recent testimony provided by the Town of Kent in response to proposed House Bill 6486 – Extended Producer Responsibility for Tires. The testimony calls attention to deficiencies in the proposed legislation that prevent it from adequately transferring the burden and cost of tire recycling to producers, or providing for enforcement. This testimony is congruent with that of other HRRRA towns and coordinated through Jennifer Heaton-Jones. **Jean has provided Connie with a copy of the testimony which Connie will circulate to the Commission.**

7. Correspondence. None.

At this time Jos Spelbos left the meeting.

Recall of 6A. Melissa made a motion to authorize payment of up to \$100 from the Kuga Fund to Jos Spelbos for the service of pruning trees at Kent Center School. The motion was seconded by Connie. During discussion the Commissioners took note of Jos' professional expertise, reliability, knowledge of the plantings at Kent Center School and frequent access/observation of the conditions of the School's hardscaping. Commissioners found \$50 per hour to be a reasonable price for the proposed work. The Commission then voted unanimously in favor of the motion. **Connie will inform Jos, cc'g Liddy.**

8. Adjourn. There being no further business before the Commission the meeting adjourned at 8:30 pm.

NEXT MEETING: Wednesday March 8th @ 7:00pm

Respectfully submitted by: Connie Manes, Chair

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28 January 2023

Kent Board of Selectmen
Town of Kent
P.O. Box 678
Kent, CT 06757

RE: Housatonic Railroad Company (HRRC)
2023 Vegetation Control Program

Dear Board Members:

Enclosed please find the 2023 Vegetation Management Plan (VMP) for the HRRC in accordance with the requirements of Connecticut General Statutes Section 22a-66a(j). Per the statute this VMP must be submitted to the chief elected official or board of selectmen of each municipality through which HRRC operates and maintains track. Additionally, this VMP has been submitted to the commissioner of the Connecticut Department of Transportation.

It is anticipated that herbicide application will commence after March 1, 2023 depending upon weather conditions and other factors.

This VMP provides details on the target vegetation and management methods for the herbicide application which will take place this year. HRRC is committed to its obligation to maintain its right-of-way in accordance with both state and federal safety standards. Vegetation management is an integral component of those safety efforts.

Please feel free to contact TEC Associates with any questions about this VMP.

Very truly yours,
TEC ASSOCIATES



Thomas W. Lewis

Enclosure

cc: Zigmund Korenkiewicz II, CDOT
Matthew Boardman, HRRC

VEGETATION MANAGEMENT PLAN

INTRODUCTION

Connecticut General Statutes Section 22a-66a(j) requires that railroads who operate in Connecticut and apply pesticides to their rights of way must file a Vegetation Management Plan (VMP) with the Department of Transportation on or before February 1 of each year and must send copies of the plan to the chief elected official of each town in which pesticides will be applied. The following plan is hereby submitted by the Connecticut Railroad Association on behalf of the following railroads (hereinafter, the "Subject Railroads"):

Central New England Railroad	Connecticut Southern Railroad
CSX Transportation	Housatonic Railroad
Naugatuck Railroad	New England Central Railroad
Pan Am Southern	Providence & Worcester Railroad

Railroads in Connecticut must adhere to an extensive body of regulations promulgated by various state and federal agencies. The most comprehensive body of safety regulations is promulgated by the Federal Railroad Administration (FRA), the agency that has primary regulatory authority over rail safety in the United States. In addition, the Surface Transportation Board has authority over a wide range of rail activities specifically designed to promote and protect the ability of railroads to efficiently and safely participate in interstate commerce.

One critical aspect of the safety regimen that railroads must adhere to is the maintenance of their rights of way such that track, structures and various appurtenances can be inspected in order to protect the safety of rail operations, the safety of railroad employees and the safety of the public. Railroads in Connecticut and throughout the country follow a carefully defined process under which they inspect their track and structures in order to discover defects that could lead to derailments or other types of accidents that would be harmful to the railroad and its employees, harmful to the public or harmful to the environment.

The following Vegetation Management Plan (VMP) is designed to accomplish several key goals. First it is designed to provide for the safe operation of railroads in Connecticut. It is a program that will enable railroads to keep track and structures clear of vegetation so that tracks and structures can be properly and safely inspected in accordance with state and federal law and in a manner that enables railroads to detect and repair defects before those defects result in accidents. The plan is also designed to assure that railroad rights of way are maintained in a manner that will prevent fires from igniting from sparks that could be generated from passing trains, from track maintenance activities such as welding or from grinding rail or other work activities. This plan is also designed to assure railroad rights of way are maintained in a manner that protects railroad employees who must have a clear area to work around moving trains and to assure they are not injured due to extensive brush and vegetation along railroad rights of way which can be a tripping hazard or conceal various hazards on the ground. Equally important, the plan is designed to assure that members of the public are protected by clearing sight lines along railroad rights of way and particularly at points where railroad tracks are adjacent to or cross public rights of way.

This VMP describes a variety of practices that include physical, chemical and natural methods used to manage, control and eradicate vegetation on railroad rights of way (ROWs). This plan addresses all of the major components of vegetation management including mechanical cutting of vegetation, the use of herbicides to control vegetation within and adjacent to the track structure and the use of other mechanical means to remove vegetation from areas adjacent to the track structure.

Historically herbicides have played a key role in controlling vegetation within and along railroad ROW's since the 1950's. In the past herbicides were often applied several times per year and at rates as great as 100 pounds active ingredient per acre. The use of herbicides today has declined significantly. In the 1970's herbicides were applied to areas adjacent of railroad roadbeds to control brush and vegetation at rates of 25-77 pounds per acre. Today application of herbicides to control brush adjacent to railroad roadbeds have been reduced to as low as 4 pounds per acre. That dramatic reduction is a result of the availability of new herbicides, improved application techniques, awareness of the environment, the use of trained licensed professionals and the implementation of an integrated approach to vegetation control.

GENERAL PURPOSE AND OBJECTIVE

Federal law requires railroads to control vegetation in and along railroad ROWs. Specifically 49 C.F.R. Section 213.37 states:

Vegetation on railroads property which is on or immediately adjacent to the roadbed must be controlled so that it does not:

- (a) Become a fire hazard to track carrying structures
- (b) Obstruct visibility of railroad signs and signals
- (c) Interfere with railroad employees performing normal track side duties
- (d) Prevent proper functioning of signal and communication lines
- (e) Prevent railroad employees from visually inspecting tracks and moving equipment from their normal duty stations.

There are many ways that vegetation directly affects railroads and consequently public safety. The typical railroad roadbed consists of stone ballast on a graded and compacted earthwork section. The track is supported by the stone ballast. The earthwork section typically slopes downward to drainage ditches on each side of the track designed to channel water away from the track structure. The presence of vegetation interferes with the proper drainage of water which destabilizes the roadbed and prematurely decays the track structure.

Moreover, in dry weather, vegetation within the roadbed can be set on fire by sparks from steel brake shoes or steel wheels. The exhaust from diesel locomotives is another source of sparks, particularly as the throttle position is being increased or decreased. Track maintenance activities such as cutting, grinding, or welding rail are another ignition source. In order to minimize or eliminate the risk of fire it is necessary for railroads to keep the full width of their ROWs clear of flammable material including vegetation.

Vegetation growing adjacent to and within the track structure also creates traction issues for passing trains. Trains require friction between steel wheels and steel rails for traction to both move trains and equally important, stop trains. Anything that reduces friction between the wheels and rails can create dangerous problems. Just as a wet pavement impacts the braking capacity of cars and trucks, wet rail has a similar impact on trains. Most plant tissues age immediately when crushed between the wheel of a locomotive or rail car and the rail. When crushed they release water and plant sap that acts as a lubricant. The addition of water and sap has the potential to reduce traction and thus increase stopping distances.

Vegetation within the track structure and adjacent to the track structure creates unsafe footing for railroad employees and increases the likelihood of an employee tripping or falling. The potential for serious injury is magnified when a train is present. Train crews work at all hours of the day and night with periods of minimal visibility, therefore the presence of vegetation within and adjacent to the tracks increases the risk of an accident and injury. While the vegetation itself can present a hazard to trains and employees, it can also obscure hazards that might otherwise be obvious to an employee working along the tracks. In recent times vegetation along the rail lines, like vegetation elsewhere, has become a habitat for deer ticks exposing employees to a significant risk of contracting Lyme disease. Removing the vegetation removes a significant source of exposure.

Visibility on and adjacent to railroad tracks is a major component of railroad safety for employees working on or near the tracks, employees operating trains and for the general public. Train engineers must be able to see all types of railroad signs and signals to assure safe operation of their trains. Engineers must have clear fields of vision when approaching highway grade crossings just as the public using those crossings must have a clear field of vision to observe the railroad. Train crews must be able to observe signs that require the activation of train whistles in order to warn the public of a train passing through an area, activities that are often mandated by federal law and regulations. Train crews and other railroad employees must have the ability to observe track and track structures and also observe moving components to be certain they are functioning properly and safely. Train and engine crews must have the ability to see around curves and see well ahead of their trains to be certain that switches are properly aligned, derails are in place and that there are no hazards ahead.

Federal laws require vegetation control to ensure proper functioning of signals and communications lines. Trees and plants short out electrical equipment and cause failure of communications systems and signals. Just as utilities must keep power lines free from trees and other growth that could cause the system to fail, railroads must also protect their signal and communications systems from similar failure.

Railroads follow a number of rigid procedures in order to reduce accidents and protect against injuries to employees and the public. The primary method for controlling accidents and injuries caused by track and roadbed defects is the federally mandated weekly or twice-weekly visual inspections by qualified track inspectors. Track inspections are normally done from a hi-rail vehicle, essentially a pick up type truck equipped with rail wheels that can operate on the rails or on the road. Inspections by Hi-rail vehicles are supplemented by walking inspections of track, switches, moving components and other more complicated components in the track structure. Some defects, such as potential broken rails are detected

by visually noting minor discolorations in the head of the rail. It is critical that the railroad roadbed be kept vegetation-free to provide the track inspector with unobstructed views of the track structure including rails, ties and fasteners. Vegetation within the railroad roadbed increases the likelihood that a track or roadbed defect will go undetected increasing the likelihood of an accident, incident or injury.

While all railroads must visually inspect their track as described above, some also employ a sophisticated electronic tool used for detecting flaws that are present but not visible to the naked eye. Most services are provided by electronic rail testing contractors who use several different methods for detecting flaws. Testing is done with highly specialized rail vehicles that rely on the ability to establish a magnetic field around the rail. Vegetation adjacent to the rails hinders this process and results in invalid test results. Other types of cars measure track geometry such as surface, line and gauge. Gauge, simplistically the distance between the two rails, is measured optically and is adversely affected by vegetation between the rails. Gauge issues can be symptomatic of a number of conditions that require treatment when detected.

In summary rail operations and rail safety rely on a wide range of activities to protect the integrity of the track structure, protect the safety of rail employees and rail operations, and protect the safety of the public. Effective vegetation management is an integral component of all railroads' safety programs and each railroad's adherence to a broad range of safety regulations.

VEGETATION MANAGEMENT

Federal laws require the control of vegetation located on the railroad roadbed and certain other areas. All vegetation will be eliminated from the following areas:

- Ballast section
- Ballast shoulder
- Yards
- Switches, signals, and signs
- Highway grade crossings
- Bridges, bridge abutments and buildings
- Off-track areas
- Inside of curves

To date, no environmentally and economically feasible and safe alternatives to herbicides have been developed for use in areas of railroad ROWs requiring total vegetation control. Tests that involve such activities as the use of boiling water, fish byproducts and mechanical equipment have not achieved any success in controlling vegetation near and within track structure. In fact, some tests of alternative approaches resulted in increased growth of vegetation. As a result, the integrated approach to vegetation management in and around track structure is limited to the selective application of herbicides to target vegetation along with control obtained through track maintenance activity. As stated in the introduction to this plan, the volume of herbicides used continues to diminish as the result of new technologies in application equipment and the use of more effective materials and products.

Following current practice within the railroad industry, herbicides will continue to be applied to railroad ROWs in Connecticut by licensed contractors who utilize highly sophisticated specialized vehicles. The vehicles are equipped with an array of booms that are independently controlled permitting the operator to control spray patterns on the left and right side of the application vehicle and in the center. In addition, the controls allow the operator to shut off application to areas lacking target vegetation. Often target vegetation in the track center is less dense than that on the side. To control these areas of lighter vegetation, often extending the width of the ties, "half rated" booms are being added adjacent to the "full rate" booms and are used whenever possible. When herbicide use is needed, the type and density of vegetation, site condition and the time of year will be factors in determining the herbicide type, application rate, adjuvant and application equipment. The contractor will take into account a range of factors mentioned above in order to attain maximum control with minimum adverse effect. In railroad yards and on certain heavily vegetated areas of the ROW, pre-emergent herbicides will be applied which may eliminate a post emergent treatment that same year. Only herbicides that are licensed for use in the State of Connecticut will be used by the railroads' contractors and licensed herbicides will only be used in accordance with their labeled instructions.

In certain areas of the ROW, branches and limbs of trees grow into and have the potential to move into the roadbed area striking trains and/or fouling overhead communication lines or interfering with critical sightlines. In these cases, trees will generally not be eliminated if a selective side trimming of the encroaching limbs can be made. Selective side trimming, primarily by mechanical or by herbicidal means will be done on a site by site basis according to the type and density of target vegetation present and its propensity to invade the roadbed area or foul communication lines.

VEGETATION MANAGEMENT TECHNIQUES

The Subject Railroads' Vegetation Management Program is defined and generally limited to the privately owned or leased ROW. The individual components of the railroad ROW as described in Section V have two distinctly different vegetation management requirements. On the ROW roadbed and other specialized areas, no vegetation is permitted as per Federal laws and regulations. On the adjacent areas of the ROW, certain woody vine and brush species must be selectively managed. Therefore, unlike other ROW's the methods of railroad ROW management are limited to two basic vegetation control techniques and one indirect method. The two basic vegetation control techniques are herbicide applications and mechanical techniques. The indirect method includes any ROW operational activity which eliminates vegetation as a secondary benefit.

Mechanical Technique

Mechanical control techniques are limited to woody and brush vegetation and only work in limited situations. Mechanical control techniques require that the railroad own or have access to sophisticated machinery that generally must be operated from the rail. It is most successful in areas where there are specific target trees or shrubs that are accessible from the rail. Because the ground adjacent to the roadbed shoulder is generally not smooth, there is considerable risk that mechanical cutting can leave short stems or sticks in the ground that can trip or injure railroad employees.

Mowing is the mechanical process of cutting a woody target species with cutting heads. The cutting heads are mounted on hydraulic arms that greatly extend the reach of the equipment. The machines can be mounted on off-track, on-track or hi-rail equipment. Large machines are required for railroad application because of the wide range of conditions found on the ROW. On-track equipment has the advantage of not having to operate over rough terrain. Off-track equipment can work independently of train movement but production may be limited by the difficulty of moving over rough terrain.

Railroad safety guidelines may restrict the use of brush cutters within developed or recreational areas. Mechanical cutters present certain safety problems which railroad personnel must take into consideration. Not only is brush cutting potentially hazardous to the general public, but railroad workers are at a higher risk during the work.

Herbicide Application

Herbicides have been used on ROW's to control vegetation because of their specificity, range of target species, degree of control, economics, safety and application methods that provide extensive control by the applicator.

Herbicides are essential to eliminate vegetation on the ROW roadbed (the ballast and shoulder area). There is no known mechanical method for adequate vegetation control on the ROW roadbed as required by Federal laws and regulations. The ballast and shoulder must be free and clear of all vegetation. This requirement necessitates that vegetation be removed down to and including the root system.

An herbicide control program consists of two different types of applications, a pre-emergent program in which the plant absorbs through developing roots before emerging from the ground and a post-emergent program in which plants absorb through foliage and other green portions or through woody portions of the plant. Target species are divided into two categories: weeds and brush.

Weed Control

The weed control program is designed to eliminate all vegetation located on the roadbed, around signs and signals and in yards and other railroad facilities. Herbaceous vegetation is the primary cover type with a lesser number of shrubs and trace seedlings also present. A combination of pre and post-emergent herbicide application accomplishes the goal of complete vegetation eradication.

Pre-emergent Herbicide Program

The pre-emergent herbicide program is directed primarily to the railroad yards and incorporates IPM to minimize the amount of herbicide used. This program is especially important with regard to employee safety because most employee activities take place within rail yards. The scheduling of a main line or yard track section for a pre-emergent herbicide application will depend on a review of the previous year's vegetation density and control efforts and an estimate of vegetation density for the coming season.

Pre-emergent herbicide applications within yards can usually be done from a hi-rail spray truck. This type of vehicle operates on the rail and has the advantage of not having to operate over rough terrain. These trucks have a rear mounted boom located about 18 inches above the ground. Spray nozzles are equipped with a spring-loaded shut-off valve to prevent dripping when pressure is turned off and some vehicles will also be equipped with specialize gutter type systems to catch any potential drips from the nozzles. Booms are operated by the operator who has number of controls at his disposal to control both when and where herbicides are applied.

Herbicide sprayed from hi-rail trucks is applied at low pressure between 30 and 40 PSI. Timing of herbicide application is dependent on favorable weather conditions and applications of pre-emergent treatment can usually begin in March.

Post-emergent Herbicide Program

The post-emergent herbicide program is directed primarily toward vegetation eradication on the railroad ROW main and branch lines. These areas comprise the bulk of a railroad's ROWs and account for the greatest proportion of herbicide use.

Post-emergent herbicide application begins in the spring and is weather and target species dependent. All treated areas are later inspected and the effectiveness of the treatment is evaluated. If necessary a second treatment may be applied later in the year.

Brush Control

The brush control program is designed to control vegetation in areas adjacent to the shoulder through the selective use of post-emergent herbicides. The type of herbicide selected will depend on the species of target vegetation present. The application method will depend on the density of target vegetation and previous mechanical control efforts. Shrubs and herbaceous vegetation in these areas will be maintained where possible.

There are several methods for the application of post-emergent herbicides to the target vegetation. The variety of methods allows the applicator to selectively apply the herbicide directly onto the target vegetation. These are described below.

Foliar

In order to control the growth of brush and woody plants along and adjacent to the shoulder and within the railroad ROW, licensed applicators will selectively apply herbicide to the foliage and or stem by a variety of flow-pressure mechanical spray devices. Application will normally be done using a hi-rail vehicle equipped with specialized nozzles and control devices. Herbicide use will be determined by the contractor in consultation with the railroad and herbicide choice will be based on the types of brush or wood plants that need to be removed or trimmed. Herbicides are applied under low pressure - 30-40 PSI.

In addition to brush and woody plant removal, foliar applications will be used to carry out necessary side trimming. Side trimming is the selective application of the herbicide to target

portions of a tree. The procedure avoids removal of the entire tree and permits removal of the portion of the tree that interferes or may interfere with the safe operation of the railroad. Foliar applications and particularly side trimming applications are performed by licensed applicators who manually control wands and nozzles so that herbicides are only applied to those areas in need of trimming. Use of low pressure nozzles and specialized materials enables crews to minimize drift.

Stem

In some cases applicators will selectively apply herbicide in a petroleum or crop oil base to the lower portion of the main trunk of a tree. This treatment is designed to inhibit the re-growth of the tree and thus minimize the need for foliar treatment in the future. The equipment used of this type of treatment is often a manually operated pump apparatus.

Cut Surface

This procedure is the application of an herbicide to the stump immediately after cutting or mowing. Traditionally the herbicide is manually painted or squirted directly onto the cut stump surface and inhibits future growth.

Application Timing

Post-emergent herbicides applied to control woody vegetation in the areas adjacent to the shoulders will be applied beginning in the spring and may continue throughout the year on selective sections of the ROW as part of the railroad's vegetation control program. Stem and cut surface treatments are effective year round. As in weed control, all treated areas are later inspected and evaluated. If further treatment is needed, a post-emergent herbicide is selectively applied to unwanted vegetation. Every consideration will be taken to minimize herbicide use while guaranteeing the overall safety of the railroad system.

MANAGEMENT OF RAILROAD RIGHTS OF WAY

Concern for public and employee welfare, environmental protection and safety is the primary reason for vegetation maintenance on the railroad ROW. Railroads carry a constant flow of raw material and finished products into, out of, and through Connecticut. Railroads and their ROWs play a vital and unique role in the operation of interstate commerce. Some rail lines also provide vital commuter and passenger rail services. Major track segments have few alternate or duplicate routes and cannot be closed easily or for long periods of time for vegetation maintenance without creating major service disruptions. Vegetation management must be scheduled around the normal schedule of rail traffic. Detailed planning and scheduling is required to accomplish vegetation maintenance activities within a narrow time window. This document reflects railroad ongoing efforts to manage vegetation within and adjacent to their track structure and to continually improve methods for managing vegetation along their rail lines. Herbicide application can only take place under certain conditions when weather is sufficiently calm and dry to permit an application.

Roadbed

The typical railroad roadbed consists of rail and ties, ballast, the ballast shoulder and the drainage system. The ballast and ballast shoulder are constructed of hard stone that supports the track. It distributes the load on the track evenly and drains water away from the roadbed and track structure. The roadbed drainage system is constructed to carry that water out of the ballast away from the track. The roadbed portion of the ROW requires total vegetation control.

Bridges

Open deck bridges, particularly those over water, are not and will not be treated with herbicides. Roadbed approaches to bridges will be treated up to the abutment back wall. The areas under bridges will be maintained in a manner to prohibit vegetation from interfering and compromising bridge structures. The default mechanism for controlling brush beneath bridges is mechanical cutting.

Culverts

Culverts are generally constructed with steel pipe, concrete pipe or stone and are normally placed at right angles to the track. Culverts are essential to moving water away from the track structure and insuring that drainage systems operate efficiently. Culverts are inspected periodically and cleaned manually or using mechanical means to insure water flows through them efficiently and doesn't back up along railroad ROWs potentially causing washouts and other damage to track structures.

Ditches

Drainage ditches must be maintained weed free to permit the flow of water away from the ballast and track structure and to maintain a stable road bed. Ditches are generally directly adjacent to the road bed ballast section and are an integral part of the track structure. Ditches are maintained using mechanical means to clear the ditches and keep them open and through the application of herbicides to keep the ditches weed free. When Herbicides are applied to the drainage ditches they are applied only in accordance with the label instructions of the material being used and only material approved for use in Connecticut is applied. Herbicides are not applied to drainage ditches that contain running water. Herbicides will be applied to drainage ditches in some cases if they hold non-running water, essentially a puddle that is contained in a highly localized spot.

ROW Areas Adjacent to the Shoulder

Woody vegetation growing in areas adjacent to the shoulder will be managed to promote the growth of low growing shrubs. Targeted woody vegetation will be that which has the potential to block visibility or invade the roadbed and/or over head communication lines. Target vegetation will include but not be limited to the following:

Ailantus	Black Walnut	Honey Locust
American Basswood	Blackthorn	Maple
American Beech	Butternut	Northern Catalpa
American Hornbeam	Cherry	Oak

Apple	Eastern Hophornbeam	Pine
Ash	Eastern Cedar	Poplar
Aspen	Elm	Sassafras
Birch	Flowering Dogwood	Shadbrush
Black Locust	Hawthorn	Spruce
Black Tupelo	Hickory	Vines

The areas adjacent to the shoulder are those areas that are between the edge of the ballast section (shoulder) and the edge of the railroad ROW on either side of the track. Low growing vegetation within the adjacent areas can serve a number of beneficial purposes so long as that growth does not impede critical sightlines for train crews, impede with maintenance of way activities or endanger employees who must work on and adjacent to the tracks. Tall growing shrubs and trees within the adjacent areas must be controlled in order to protect signal and communications lines, to maintain sightlines for train crews so they can observe the ROW ahead of the train and to avoid trees and shrubs from hitting trains as they pass. Vegetation in these areas will be managed using mechanical means and the application of herbicides.

Grade Level Road Crossings

Vegetation at grade level road crossings will be controlled with the application of herbicides as well as selective mechanical cutting in order to preserve critical sightlines for train crews and for members of the public who use the road crossing.

Railroad Signals, Signal Cases, Communication Systems and Signs

The areas around signals, communications systems, signal cases and signs will be maintained weed free providing a safe line of sight between the engineer and the signals or signs and to permit maintenance of the equipment. All signal/communications will be protected in order to protect the integrity of the signal and communication systems.

Inside Curves

In the area adjacent to the shoulder, on the inside of curves, low growing vegetation must be maintained to allow railroad employees on trains to inspect trains as they operate around curves. Vegetation must also be managed in these areas to insure sight lines are maintained permitting train crews to see ahead of trains as they operate through curves.

Railroad Facilities

Railroad facilities include yards, buildings, fueling facilities, and off-track areas. Yards are areas with multiple tracks and switches where trains are assembled, disassembled and equipment is stored. Yards are areas where employees are working on the ground around moving cars and trains that are being moved from track to track and being assembled into trains. They are areas that must be maintained as weed free as possible to minimize the possibility of an employee tripping or falling. Buildings include offices, maintenance and repair buildings and signal towers, usually within yards. Fueling areas are locations where locomotive fuel is stored and distributed. Off-track areas are areas that are not accessible by rail.

Railroad facilities must be maintained as weed free as possible to allow safe and efficient operation, reduce fire hazards and permit proper inspection of railroad track and facilities.

REMEDIAL PLAN TO ADDRESS SPILLS AND RELATED ACCIDENTS

Licensed Applicators who operate in the State of Connecticut have plans for the unlikely event of a spill or accident. Since there is no such thing as a standard event, applicators must weigh factors specific to the situation and use their best judgment to decide the appropriate course of action in the event of a spill. Because applicators normally carry only small amounts of herbicides, the potential for serious accidents is relatively small.

Federal and state statutes establish emergency response procedures that must be followed by companies and their contractors in the event of a spill or related accident. Under the Federal Environmental Pesticide Control Act, it is the applicator's legal responsibility to clean up pesticide spills resulting from their use and handling of the product. Applicators are liable for damages, subject to penalties and obligated to clean up and decontaminate areas resulting from pesticide spills.

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) 42 U.S.C. 9601 et. seq., and the Federal Water Pollution control Act (CWA 22 U.S.C. 125 et. seq.) are aimed at eliminating the accidental discharge of oil and hazardous substances into the environment, providing for the cleanup of such substances, and establishing responsibility for costs of cleanup. CERCLA and CWA are implemented by the National Oil and hazardous Substance Pollution Contingency Plan (NCP) 40 CFR 300 et. seq.

The Farm Chemical Handbook (published by Meister Publishing Co., Willoughby, Ohio), U.S. Department of Transportation "1987 Emergency Response Guidebook" (available from UNZ and company Jersey City, New Jersey), herbicide labels, and material safety data sheets provide reference information for the chemicals being used. Applicators carry equipment for emergency action including sand or other absorptive material, broom, shovel and heavy duty plastic bags or other leak-proof sealable containers.

SUMMARY

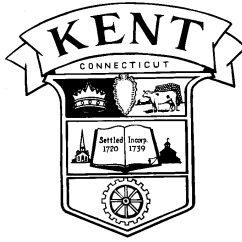
The management of vegetation within railroad track and structures and along railroad ROWs is a critical component of railroad safety programs in Connecticut. Vegetation both within and adjacent to the track structure inhibits the railroad's ability to properly inspect its track and structures and - equally important - detect flaws that can cause accidents and injury to employees, the environment and the general public. The maintenance of safe sightlines along ROWs and particularly on approaches to highway grade crossings is essential to allow train crews to operate safely and likewise to support safe operations by the general public when around railroads. Maintaining clear roadbeds and clear areas adjacent to the track structure both along ROWs as well as in rail yards provides rail employees with a safe working environment minimizing hazards that can cause personal injuries.

The application of herbicides is performed in a safe and controlled way that is presently being overseen by authorities at the Connecticut DEEP and the EPA. Licensed contractors who

apply herbicides to rail ROWs only work with herbicides authorized for use on ROWs by the EPA and the State of Connecticut. When applied by a Connecticut licensed applicator in accordance with federal and state law, herbicide label instructions, and this Vegetation Management Plan, an herbicide selected from a list of products licensed for use in Connecticut is expected to have no unreasonable adverse effects to the general public or the environment. Many mechanical techniques for vegetation management pose risk and danger to the general public and to employees. Presently there are no adequate mechanical methods available for controlling vegetation found on railroad roadbeds and ROWs that must be kept clear of vegetation in order to meet critical safety requirements. Both federal and state regulations, and sound operating principles, mandate that railroads visually inspect their entire ROW system. Tracks and structures must be clear of vegetation in order for inspectors to detect defects and repair those defects before they become safety hazards. Inspectors and employees must be able to visually inspect communications systems, drainage systems and other signs and devices along the ROWs. Approaches to highway at grade crossings must be kept clear so that train crews can see the road ahead and so that members of the public using the crossings can observe approaching trains. Herbicides provide the most reliable and generally safe method to prevent and remove weeds which inhibit inspections. Track, structures and ROWs that are clear of vegetation result in significantly fewer employees being injured. Avoidance of mechanical cutting results in fewer employees being injured or even killed.

Since herbicides are available in a wide variety of dry and liquid forms, the railroad and its contractor can select the most effective herbicide for that particular site and target vegetation. Because herbicides have been developed over the years that are increasingly effective and their application much more precise, application rates per acre have dropped significantly and improvements continue. Licensed applicators use sophisticated on-track vehicles and have the ability to control booms and nozzles such that they can selectively control application locations and rates. Applicators constantly monitor the environment and only apply herbicides when weather conditions permit. Applicators maintain careful records that note material used and areas treated.

In summary, highly trained licensed professional applicators assisted by railroad personnel will apply herbicides chosen from a state and federal approved list that are specific to the target vegetation. By using state of the art equipment and specific adjuvants, applicators will safely, efficiently and economically manage vegetation on the ROWs. The end result is a safe and environmentally sound transportation system.



TOWN OF KENT

Testimony HB 6486 – **OPPOSE** AN ACT CONCERNING THE EXTENDED PRODUCER RESPONSIBILITY FOR TIRES

Environment Committee Public Hearing – Monday, January 30, 2023

Honored Co-Chairs, Sen. Lopes and Rep. Gresko, and distinguished Members of the Environment Committee,

The Town of Kent opposes the proposed language in HB 6486. However, we support Extended Producer Responsibility for Tires. The current language does not address municipal or environmental concerns, nor does it establish an adequate product stewardship program for scrap tires.

Our concerns:

- Many municipalities, including Kent, do not have cost-effective outlets for tires received by residents.
- A survey of municipalities revealed Connecticut towns are paying as much as \$80,000 annually for the disposal of tires.
- Although most retailers charge customers \$5 (locally in Kent it is \$8) for disposal of their used tires, customers who do not wish to pay, or who think they might want the tires in the future, can choose not to pay, taking the tires and leaving the possibility of illegal disposal.
- Public Works collects those illegally dumped tires on public property including the roadside leaving the towns the party responsible for the cost of disposal.
- Many towns try to avoid residential dumping by accepting tires at no cost, leaving the sole burden of the cost of disposal on the municipal.
- Since the closure of Sterling, many municipalities have found themselves struggling with cost effective and reliable disposal options.
- Some third-party recyclers/transporters are known to pick up large quantities of tires from retailers, get paid for the service, pull off the “good-tires” and illegally dump large quantities of spent tires that are not resalable. **The rural, low-volume, dead end roads in Kent, and many other rural towns, are easy targets as dumping grounds for these companies.**
- Illegally dumped tires are a direct result of market failure and economic inefficiencies.
- Due to the lack of disposal markets, tires are discarded directly into the environment in landfills and open tire stockpiles or are randomly dumped.¹
- All these disposal methods involve costs such as transportation and processing and social costs in the form of risks to human health and the environment.¹
- Stockpiled tires can catch fire and burn indefinitely or provide breeding grounds for disease-carrying mosquitoes.¹
- Illegally dumped tires are costly to clean-up and have a negative impact to the environment.
- In a 2020 study of the cause of acute mortality of adult coho salmon, scientists identified tire-derived chemicals as the sole cause of mortality.²

¹ | <https://www.epa.gov/sites/production/files/2017-09/documents/ee-0075-01.pdf>

² | <https://science.sciencemag.org/content/early/2020/12/09/science.abd6951>

- Voluntary systems have not proven to work. The EPA has been studying the concerns of illegally dumped tires since the mid-1970's. To date no state has formally taken action to resolve the economic and environmental concerns and have left the cost burden of collection, transportation and disposal to local and state governments or private landowners.

The proposed bill language has a number of shortcomings:

- It is self-serving to the tire industry, and further requires the State Department of Revenue Services to *“administer, collect, and enforce the fee authorized...”* placing the burden back on a state agency - not the tire industry - to address the material management of tires;
- It calls for a grant system, administered by the state, not a stewardship organization, and *“Up to 75% for grants to Scrap Tire Recyclers who produce and sell tire derived products and to Ultimate Product manufacturers who use materials derived from scrap tires.”*
- While there is a small proportion of *“Up to 25% for grants to local governments to assist in remediation of Abandoned Scrap Tires Piles,”* it does not address public awareness, public education, the prevention of illegal dumping, and or scrap tires disposed and then managed by municipal transfer stations.

The solution for tires:

The Town of Kent supports extended producer responsibility to address the tires that are not managed at retail locations. EPR for tires exists in many countries, including Canada and 19 countries in Europe. Passing EPR for tires in the Connecticut would pave the way for manufacturers to share the burden with municipalities.

The program should include how the responsible party will ensure consumer convenience for end-of-life management, meet performance goals, provide effective education and outreach, and fund the program.

In 2007, Connecticut became **one of the first states in the country** to pass EPR legislation for electronics waste.

In 2011, Connecticut became **the third state in the country** to pass EPR legislation for paint.

In 2013, Connecticut became **the first state in the country** to pass EPR for mattresses.

These laws all adopted a “product stewardship” model, and have been successful in removing these products from the waste stream and decreasing illegal dumping, resulting in lowering carbon emissions and keeping our municipalities on the road to improving the environment.

The Town of Kent urges the committee to consider revising language in the bill using the model of the current EPR laws that includes product stewardship, public education, reduction in the cost burden to municipalities, and responsibility of the manufacturers.

Revision of the language will put forth a bill that meets the needs of the municipalities and incentivizes manufacturers to design more sustainable products. **Let's be the first state in the nation to pass EPR for Tires legislation that reduces waste, increases recycling, creates jobs, is environmentally responsible, and ultimately improves our lives.** Thank you for the opportunity to submit testimony.

Sincerely,



Jean C. Speck
First Selectman
Town of Kent
Member Town of the Housatonic Resource Recovery Authority

TOWN OF COLCHESTER

FISCAL VALUE OF LAND USE

FUNDED BY

CT DEPARTMENT OF AGRICULTURE AG-VIABILITY GRANT

Cost of Community Services Study
Build-out Analysis
Fiscal Impact Projection

Prepared by
Paula Stahl, LLA, AICP
Stahl & Associates LLC

January 7, 2013

The Cost of Community Services Study is a tool used to demonstrate the cost to provide town services on a land use basis. The American Farm Land Trust developed the model 30 years ago, since then it has been used across the country to evaluate the differences between revenue generated and services required by specific land uses.

A **Build-Out Analysis** estimates the potential future development based on the amount of undeveloped land, site development limitations and zoning regulations.

Fiscal Impact Analysis studies how future development might impact the town's Mill Rate.



COST OF COMMUNITY SERVICES STUDY

Cost of Community Services Studies (COCS) are case studies that use a consistent methodology to determine the fiscal contribution of current land uses of a particular town. Because the methodology is consistent, COCS Studies can be compared to other towns. A COCS Study is a snapshot in time, for Colchester the snapshot is of fiscal year 2012-2013, and analyzes revenues and expenditures for each type of land use. A COCS Study provides a baseline of current information and a tool for comparison. The results of the Colchester COCS Study will be used with the results of the Colchester Build Out Analysis for a Future Fiscal Analysis.

METHODOLOGY

For this COCS Study Colchester's budget and other financial data for the 2012-2013 fiscal year was analyzed along with the Colchester Grand List of 10/1/11, the basis for determining Colchester's Mill Rate for 2012-2013. The Study focused on the amount needed to be raised by local taxes on property assessed (real estate, motor vehicles and personal property) to support the town services used. The findings are in the form of ratios that compare Colchester's 2012-2013 budgeted revenue to the budgeted expenditures allocated over Colchester's unique mix of land uses.

The basic steps of the study are:

1. Collect budget data for Colchester's 2012-2013 revenues and expenditures,
2. Determine the major land use categories in Colchester,
3. Allocate the full taxable Grand List by each land use category,
4. Allocate the town's revenues and expenditures by each land use category,
5. Analyze the data and calculate the revenue-to-expenditure ratios for each land use category.

For Colchester's Study, the data collected included the Fiscal Year 7/1/12 to 6/30/13 approved budget by department and category, debt payment schedule, detailed real estate assessment for 6386 properties, motor vehicles by assessment category and personal property by assessment category.

After reviewing the Grand List, it was determined that this Study will use the same major land use categories as the majority of other communities across the country. The categories are:

Residential: Single- and multi-family residences, condominiums, apartment buildings, and rental units and the people that inhabit them.

Commercial/Industrial: Businesses (such as retail, service and restaurants), manufacturers, industrial uses and utilities.

Open Space/Farm/Vacant: Undeveloped parcels, forestland, farmland and land zoned residential or commercial and assessed as excess land.

GRAND LIST ALLOCATION BY LAND USE CATEGORY

Colchester's Assessor's 10/1/11 Grand List was analyzed and properties allocated by the type of land uses per the assessor's database. The following summarizes the results of the analysis. The grand total of taxable properties is \$1,186,104,840 as shown on the Mill Rate Calculation page of the budget document and used to determine the Mill Rate of 28.80 for the fiscal year 2012-2013.

Table 1
Town of Colchester
Grand List Data

	Residential	Commercial Industrial	Open Space Farm/Vacant	Total
Taxable Property:				
RE : Residences	870,216,010			870,216,010
less exemptions	(1,448,005)			(1,448,005)
RE: Commercial		117,725,670		117,725,670
RE: Open Space, Farm, Vacant			34,803,750	34,803,750
Motor Vehicles - by code	94,441,230	20,668,760	279,300	115,389,290
Personal Property - by code	978,020	33,274,075	3,666,030	37,918,125
Motor Vehicle supplement - by code %	10,803,639	2,364,410	31,951	13,200,000
Budgeted Prorates and BAA adjustments - by %	(1,395,420)	(249,077)	(55,503)	(1,700,000)
Total	973,595,474	173,783,838	38,725,528	1,186,104,840

BUDGET AND REVENUE ALLOCATIONS BY LAND USE CATEGORY

Each of Colchester's budgeted revenue and expenditure line items were allocated to the same three land use categories as the Grand List allocation. Each budget allocation was based on the 2012-2013 approved budget line item by line item for both revenues and expenditures. For example, the revenue items for a library grant and library fines and fees were allocated at 100% to the residential land use as was the budgeted expense for Cragin Library. Real estate tax revenue was allocated according to the Grand List Data shown above times the Mill Rate of 28.80. Certain revenues and expenditures were allocated by the percentage of each land use category to the total grand list.

Colchester's expenditure budget for 2012-2013 was \$50,281,526 offset by an equal amount of revenues from local taxes, intergovernmental sources, fees, interest and other revenues. The summary of the Study is shown in Table 2 on the following page.

TOWN OF COLCHESTER: FISCAL VALUE OF LAND USE

Table 2
Town of Colchester
Summary - Cost of Community Services
Based on 2012-2013 FY Budget

	2012-2013 Budget Total	Residential	Commercial Industrial	Open Space Farm/Vacant
Grand List	1,186,104,840	973,595,474	173,783,838	38,725,528
Revenue				
Real Estate Tax Revenue	28,853,792	23,684,181	4,227,554	942,057
Personal Property Tax Revenue	1,092,042	0	1,004,679	87,363
Other Taxes	4,266,649	3,493,711	743,792	29,146
Total Tax Revenue	34,212,483	27,177,892	5,976,025	1,058,566
Intergovernmental Revenues	14,889,100	14,760,386	116,937	11,777
Local Revenue	1,120,829	896,641	190,452	33,736
Other Revenues	59,114	46,959	10,326	1,829
Total General Fund Revenue	50,281,526	42,881,878	6,293,740	1,105,908
Town Government Expenditures				
General Government	3,266,599	2,785,872	408,880	71,847
Public Safety	2,211,618	1,886,147	276,828	48,643
Public Works	3,271,201	2,789,797	409,456	71,948
Community & Human Services	1,385,631	1,385,631	-0-	-0-
Capital Projects & Debt Pmts	2,622,317	2,580,847	35,272	6,198
	12,757,366	11,428,294	1,130,436	198,636
Board of Education	37,524,160	37,524,160	-0-	-0-
Total General Fund Expenditures	50,281,526	48,952,454	1,130,436	198,636
Total Revenue	50,281,526	42,881,878	6,293,740	1,105,908
Total Expenditure	50,281,526	48,952,454	1,130,436	198,636
Cost of Services Used for every \$1 Paid in Taxes		1.14	0.18	0.18

COST OF COMMUNITY SERVICES STUDY SUMMARY

The results of the Study show that for every \$1 paid by a residential use, \$1.14 is used in services, meaning that residential properties do not provide sufficient revenue to support the cost of services provided to them. The results for the other two land use categories both indicate that for every \$1 paid by those uses, only 18 cents is needed for their services. Table 3 below shows the results of this study for Colchester, and Table 4 shows the results from similar studies in Connecticut.

Colchester Cost of Community Services Study

The dollar cost of services for every dollar paid in local taxes

	Residential	Commercial Industrial	Open Space Farm/Vacant
Colchester 12-13	1.14	.18	.18

Table 3. Cost of Community Services Study shows the amount of services provided to each land use category for every \$1.00 paid in local taxes. These results indicate that as land use shifts from undeveloped to residential use, the demand for services increases. This increased demand will result in an increased Mill Rate.

Other Connecticut COCS Studies

The dollar cost of services for every dollar paid in local taxes

	Residential	Commercial Industrial	Open Space Farm/Vacant
Bolton (1)	1.05	.23	.50
Brooklyn (3)	1.09	.17	.30
Coventry (3)	1.06	.25	.25
Durham (2)	1.07	.27	.23
Farmington (2)	1.33	.32	.31
Lebanon (3)	1.12	.16	.17
Litchfield	1.11	.34	.34
Pomfret (2)	1.06	.27	.86
Windham (3)	1.15	.24	.19

(1) Geisler; (2) SNE Forest Consortium; (3) Stahl

Table 4. Cost of Community Services Studies for other Connecticut towns parallels Colchester's results and shows that the more developed towns have increased demand for services from residential properties.

Although counterintuitive, development over time may not bring lower taxes. There is an immediate increase in tax revenue, but gradually the demand for increased services, and the need to upgrade infrastructure, increases expenditures to an amount that exceeds the increased revenue, resulting in an increasing Mill Rate. Even new commercial and industrial development can trigger an increase in residential development, require additional infrastructure, increase traffic, and have other impacts that can contribute to an increased cost of services also resulting in an increasing Mill Rate.

BUILD-OUT ANALYSIS

A Build-Out Analysis estimates the maximum development possible in a community. This study is based on Colchester's land use as determined by the Town Assessor. A Build-Out Analysis isn't an attempt to forecast what will happen, but rather what is possible under current land use regulations. For this analysis, the proposed Colchester Zoning Regulations, district boundaries and minimum lot size was used.

METHODOLOGY

The first step in estimating the amount of additional development possible is to determine how the land is currently used. Second, the average percentage of town-wide site limitations is calculated. Third, the parcels with the greatest potential for development are identified. Lastly, the build-out is calculated.

PARCEL INFORMATION

Once a year the Town Assessor develops a Grand List of all the properties within Colchester, the Grand List for 10/1/11 was used for this study. By using the Assessor's data along with the parcel map and on-line parcel information, a current use for each parcel was determined. Each parcel was then categorized by current use and acreage. Table 5 is a summary of all the parcels on the Assessor's database. According to that database, Colchester is currently divided into 6,386 parcels totaling 29,399 acres. According to GIS calculations, the total area within the town borders is 31,561 acres. The variance appears primarily to be attributed to state roads not on the Assessor database.

Table 5
Town of Colchester
Summary of Current Land Use

Current Use Category	Number of Lots	Total Acres	Average Acres
<u>Residential Use</u>			
Condos and mobile homes	570	296.8	
Less than or equal to 1 acre	1,511	860.0	0.6
Greater than 1 acre less than 2 acres	1,690	2,466.9	1.5
Greater than 2 acres less than 5 acres	953	2,962.0	3.1
Greater than 5 acres less than 20 acres	392	3,521.0	9.0
Greater than 20 acres	95	4,425.2	46.6
	5,211	14,531.9	
<u>Commercial Use</u>			
Less than or equal to 5 acres	181	225.0	1.2
Greater than 5 acres less than 10 acres	14	102.0	7.3
Industrial & Public Utility	27	102.0	3.8
Greater than 10 acres	14	378.7	27.1
Primarily undeveloped, zoned residential	6	496.3	82.7
	242	1,304.0	
<u>State/Municipal/Institution/Other</u>			
State of Connecticut	53	3,532.4	66.6
Colchester	93	1,180.7	12.7
Religious Org / Cemetery	16	85.4	5.3
Land Trust	4	61.5	15.4
City of Norwich	10	1,145.5	114.6
Other Non-Profit	12	24.1	2.0
	188	6,029.6	
<u>Undeveloped Parcels</u>			
Residential < .15	49	5.0	
Residential < 2	328	342.1	1.0
Residential > 2 ac < 4ac	84	233.9	2.8
Residential > 4 ac	132	2,080.7	15.8
Commercial and Industrial	44	227.9	5.2
Agriculture and forest (may incl. res.)	108	4,643.9	43.0
	745	7,533.5	
Total per Assessor Database	6,386	29,399.0	

SITE LIMITATIONS

The next step was to analyze the town's soils for conditions that would restrict development. In Colchester, the town's regulations prohibit building on wetland soils, or steep slopes, and inland wetlands review is required for any development proposed within 100' of a stream or waterbody and within 75' any wetland soils.

By analyzing Colchester's GIS information, the site limitations for building can be determined. The USGS Soil Survey data defines soils by various categories including water, hydric or wetland soils, and also by the degree of slope.

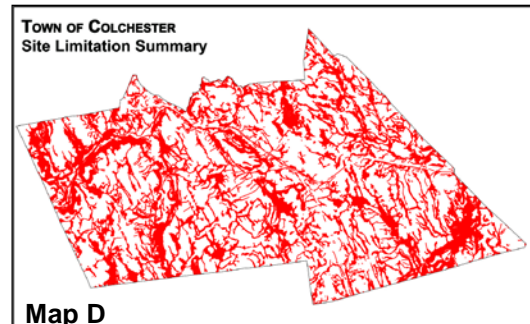
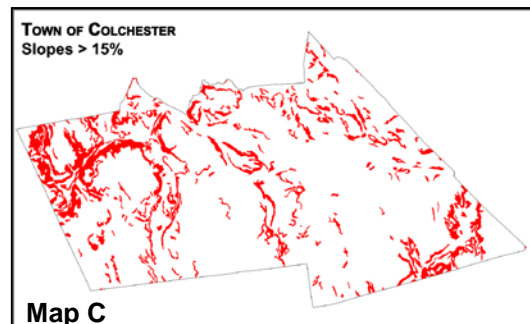
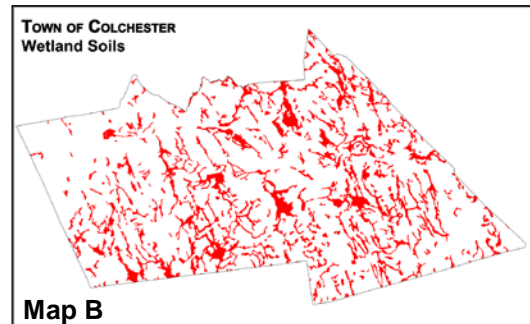
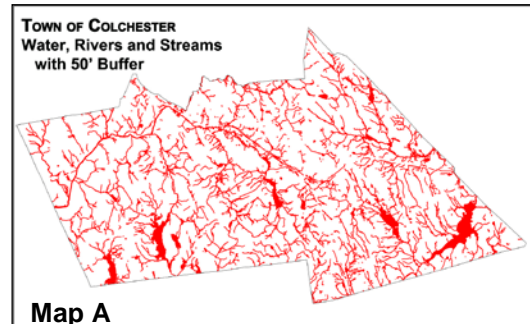
You can't build in water. Map A shows in red the amount and locations of soils classed as lakes, ponds, rivers and streams with a 50' buffer used for this analysis. Regulations stipulate that you cannot build in wetland soils, the USGS Soil Survey refers to these as Hydric Soils and they are shown in Map B. The USGS Soil Survey classifies soil type by slope as well; Map C shows steep slope that are 15% or greater. Map D summarizes the town-wide site development limitations.

Of the 31,561 acres in Colchester, there is a town-wide average site limitation of 38.4% that will limit future development. Much of Colchester was developed long before these regulations were in place, so some of these 'unbuildable' areas have actually been built upon. See Table 6 for the site limitations in acres.

Table 6
Town of Colchester
Site Limitations Town-wide

Total Acres	31,561
Site limitation (in acres):	
Slopes > 15%	4,092
Water, Streams and Rivers	
plus 50' as a buffer	981
Wetlands plus 37.5' as buffer	<u>7,052</u>
Total Acres with limitations	12,125
average site limitations town-wide	38.4%

Source: GIS soil data layer by classification as of 12/11/12



PARCELS WITH POTENTIAL FUTURE DEVELOPMENT

Currently the primary land use in Colchester is residential; this build-out analysis will focus on the potential for additional residential development in the town. This step in the analysis involves reviewing parcels and codes on the Assessor's database (see Table 5) to determine, based on lot size, which have a potential to be developed. The resulting list was then categorized by current use and parcel size.

Table 7 summarizes the land, by category, which was considered potentially developable. These 1,134 parcels totaling 15,605 acres (49% of the town) were then be used in the build-out calculations.

Undeveloped parcels. There are 319 undeveloped residential lots that might not meet the proposed minimum lot size, but would be considered 'lots of record' and potentially could be developed. 84 undeveloped parcels, between 2 and 4 acres, could potentially be developed but assumed too small for subdivision. There are 132 parcels greater than 4 acres that total 2,081 acres. In addition, there are 6 parcels currently used for outdoor activities, totaling 496 acres, that could potentially be developed as they are primarily undeveloped today.

Larger parcels with existing with residences. Some parcels, currently developed with one residence, could conceivably be subdivided in the future. For this analysis, a single family home on a parcel larger than 5 acres was considered to have excess land that could potentially be subdivided and later developed.

Agricultural lands. Colchester has a significant number of parcels coded by the Assessor as having an agricultural use. Of these, 108 are undeveloped and total 4,644 acres. Another 99 parcels, totaling 3,661 acres, are coded as agricultural use and include a residence, these larger parcels could potentially be subdivided and later developed.

For this analysis, it was assumed that undeveloped parcels owned by Connecticut, Colchester, or a religious organization would never be developed.

Table 7
Town of Colchester
Parcels with Residential Development Potential

	Number of Lots	Total Acres	Average Acres
Undeveloped parcels in residential zones:			
Lot of record < 2 acres > .20	319	341	1.1
Parcels > 2 acres < 4 acres	84	234	2.8
Parcels > 4 acres	132	2,081	15.8
Primarily undeveloped	6	496	82.7
Existing Residential Use: 5 - 20 acres			
Parcels > 5 acres < 20 acres	356	3,091	8.7
Parcels > 20 acres	30	1,057	35.2
Parcels with Agricultural Use			
Undeveloped farm or forest land	108	4,644	43.0
Parcels between 5 and 20 acres with Res. Use	36	430	11.9
Parcels greater than 20 acres with Res. Use	63	3,231	51.3
	1,134	15,605	

BUILD-OUT CALCULATION

Once the potential parcels and the town-wide average site limitations have been determined, the potential residential build-out can be calculated. The build-out was calculated using the proposed 2-acre minimum parcel size, current regulations would all significantly smaller parcels and would greatly increase the build-out potential.

To be conservative, parcels that currently have a residence were limited to future development on the land in excess of 3 acres, only those remaining acres were considered potentially developable. It was also assumed that existing vacant parcels less than 4 acres would be limited to only one residence; in actuality abutting properties could be combined for additional buildings.

All parcels, except the lots of record, were reduced by 38.4% based on the town-wide average site limitations. With growth comes the need for additional infrastructure (roads, parks and municipal

Table 8
Town of Colchester
Build-out Calculations: Residential

	Lots Avail	Acres Avail	Avg Acre	Ex. Res Use	Avg Acre	Less Avg Site Lim.	Less 5% for Infr.	Net Avail. Acres	If at min. lot size	If at large lot size
Undeveloped parcels in residential zones:										
Lot of record < 2 acres > .2	319	341	1.1						319	319
Parcels > 2 acres < 4 acres	84	234	2.8		2.8	1.7	1.6	134	89	49
Parcels > 4 acres	132	2,081	15.8		15.8	9.7	9.2	1,214	809	441
Other primarily undeveloped	6	496	82.7		82.7	50.9	48.4	290	193	105
Existing Residential Use: 5 - 20 acres										
Parcels > 5 acres < 20 acres	356	3,091	8.7	3	5.7	3.5	3.3	1175	783	427
Parcels > 20 acres	30	1,057	35.2	3	32.2	19.8	18.8	564	376	205
Parcels with Agricultural Use										
Undeveloped farm or forest land	108	4,644	43.0		43.0	26.5	25.2	2,722	1,815	990
Parcels 5 - 20 acres with Res.	36	430	11.9	3	8.9	5.5	5.2	187	125	68
Parcels 20+ acres with Res.	63	3,231	51.3	3	48.3	29.8	28.3	1,783	1,189	648
	1,134	15,605							Potential additional households	5,698 3,252
									Current households (2010)	5,669 5,669
									Potential total households	11,367 8,921
									Current population (2010)	15,383 15,383
									Potential population at 2.71 per household (2010 statistic)	30,805 24,176
									Potential population growth	200% 157%

buildings), for that reason the parcels were further reduced by 5%.

Table 8 summarizes the build-out analysis. Two scenarios were used to calculate build-out and are shown in the last two columns on the right. The assumption for both was that only single-family detached homes would be built; if the development included condo or apartment complexes, the population density per acre would be increased considerably.

The first build-out potential column, assumes that all future residential development will be on lots no larger than 2 acres; or on conservation subdivisions based on a 2 acre lot size. This is the manner of a traditional build-out calculation - assuming the worst-case scenario. The second build-out potential column, is more conservative and assumes that the future average residential development will be on 4 acres.

Currently there are 5,669 households in Colchester, that could grow by 157% to 200% if future development were limited to a density of one household per 2 acres as proposed.

With the housing pressures facing Eastern Connecticut in the future, a 10% growth rate per decade is likely, if so, build-out could be reached in 50-60 years. Table 9 shows the decade when full build-out would be reached based on the two scenarios and for growth rates of 5%, 10% and 15%.

Because Colchester is such a desirable community in which to live, the town recently has seen remarkable growth; the town grew at 33% between 1990 and 2000, the recession held growth to 6% from 2000 to 2010.

Table 9 Town of Colchester Projected Decade Build-out Could Be Reached at various growth rates							
If at min. lot size / 200% population growth				If at larger lot size / 157% population growth			
	5%	10%	15%		5%	10%	15%
2010	15,383	15,383	15,383	2010	15,383	15,383	15,383
2020	16,152	16,921	17,690	2020	16,152	16,921	17,690
2030	16,960	18,613	20,344	2030	16,960	18,613	20,344
2040	17,808	20,474	23,396	2040	17,808	20,474	23,396
2050	18,698	22,521	26,905	2050	18,698	22,521	24,176
2060	19,633	24,773	30,805	2060	19,633	24,176	
2070	20,615	27,250		2070	20,615		
2080	21,646	29,975		2080	21,646		
2090	22,728	30,805		2090	22,728		
2010	25,057			2100	23,864		
/				2110	24,176		
2151	30,805						

FUTURE FISCAL IMPACT: A 20-YEAR PROJECTION

Any land use changes today, will have a fiscal impact on Colchester in the future. Developing a parcel increases the Grand List and increases tax revenues. Because this developed parcel now has a greater demand for town services, town expenses will also increase. For example, if a large parcel were to become a factory employing 50 people with many truck deliveries, perhaps the town would have an added expense of upgrading and maintaining nearby town roads. Many future expenses are incremental – one more house would not mean the need for an addition to the elementary school, but perhaps 30 or 50 more houses would increase the student population to a point that a building expansion would be necessary.

METHODOLOGY

The assumptions that were used for this study are based on information received from Colchester and other fiscal forecasting studies. The basis for the analysis was Colchester's 2012-2013 fiscal year budget, projected to fiscal year 2022-2023.

ASSUMPTIONS

Projections are based on assumptions.

To isolate the effect of change in land use from the effect of inflation and other budget increases, the following assumptions were made for the calculations:

- State aid to Colchester would remain the same
- State reimbursement rate (%) for education would remain the same
- Colchester's Mill Rate was fixed at 28.8, the current rate
- There would be 0 % inflation
- All town and Board of Education salaries would remain the same
- All 2012 debt would be paid within 20 years

Assuming a 10% per decade population growth, in 20 years:

- Taxes would increase by the growth in the Grand List
- Revenue from town services and fees would increase at the rate of growth
- Certain expenses would increase at the rate of growth (i.e. library, public works)
- Certain expenses would increase at less than the rate of growth because population increase would have limited affect (i.e. legal counsel, elections)
- Certain expenses would increase at a higher rate than the rate of growth because population increase would have a greater affect (i.e. public safety)

Assumptions made regarding Colchester education system

- In 20 years, Colchester Elementary School would be 50 students above capacity
- In 20 years, Jack Jackter Intermediate School will near capacity
- William Johnston Middle School would have capacity

TOWN OF COLCHESTER: FISCAL VALUE OF LAND USE

- Bacon Academy is over capacity today and is utilizing temporary classroom buildings
- School population would increase at a rate of 1.2 per new household.

PROJECTIONS

If Colchester were to grow at 10% per decade, by 2032 (20 years from today) land use would shift as undeveloped land was developed. This growth is projected to result in an increase in the grand list of over \$151 million and an additional \$4.2 million in local taxes at today's Mill Rate. The intergovernmental revenues would increase by almost \$3 million. The total revenue on Colchester's Fiscal Year 2032-2033 budget would be projected at \$7.2 higher than today.

However, the demand for services from an increased population and additional school children would cost an additional \$11.5 million in expenditures, and create a short fall of \$4.2 million. A 3.6 Mill Rate increase would be needed to balance the budget.

Because all other variables were calculated at a zero change, the Mill Rate increase of 12.4% would only be the result of the town's population growth.

COMPARISON TO OTHER TOWNS

Findings in similar studies across the country have found that growth over time increased the cost of services greater than the accompanying revenue, requiring a Mill Rate increase to balance the budget.

To offset the fiscal impact of growth, many towns have adopted an aggressive agricultural land and open space acquisition, either by out-right purchase of open space or the purchase of development rights. The funding source is usually through a partnership among the town, local and regional land trusts, non-profits, state and federal agencies.

For example, the Town of Pomfret, CT in 2007 purchased the development rights to the MacDaniel farm for \$600,000. Over a 20 year time period, the net cost (price, interest and cost of services less the tax revenue still generated) was projected to be \$706,471. However, if that land were developed into single-family residences, the 20 years net expense (taxes paid on above-median assessed homes less the cost to provide services to the residents) was projected at \$2,495,909 over that same time period. By purchasing the development rights to the MacDaniel farm, the town saved \$1,789,438 in budget short-fall over that 20 year period. As a bonus, they were able to maintain a working farm that is part of the local economy and the rural landscape that is enjoyed by all.