TEC ASSOCIATES CONSULTING ENGINEERS

24 January 2020

First Selectman Henry Todd
Town of Canaan
108 Main Street
P.O. Box 47
Falls Village, CT 06031

RE: Housatonic Railroad Company (HRRC)
2020 Vegetation Control Program

Dear First Selectman Todd:

Enclosed please find the 2020 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.

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

T.W. Lewis

Thomas W. Lewis

Enclosure

cc: Eric Bergeron, CDOT
Matt Boardman, HRRC

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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 Horphornbean	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, Signals 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.