## NJ Department of Environmental Protection

## Integrated Pest Management Prerequisites and Minimum Criteria for Railroad Rights-of-Way

## General Definition of IPM:

IPM is a sustainable approach to managing pests by using all appropriate technology and management practices in a way that minimizes health, environmental, and economic risks. IPM includes, but is not limited to, monitoring pest populations, consumer education, and when needed, cultivation practices, sanitation, solid waste management, structural maintenance, physical, mechanical, biological and chemical controls.

## Prerequisites for IPM:

## Education and Training of Field Personnel

The establishment of a training program is essential to the success of IPM. Field personnel should be educated on the philosophy of IPM and the various pest management techniques that can eliminate reliance on pesticides. An overall reduction in chemical controls, along with the appropriate choice of pesticides and application methods through the use of IPM, results in a lower risk and exposure potential for humans, pets and other non-target organisms. Risks and efficacy of both chemical and non-chemical control methods of pest suppression must be considered as part of an overall pest management strategy. They should have field experience and training on plant identification, plant culture, pest identification and control, and the principles of IPM.

IPM training resources are available from Rutgers Cooperative Extension, the Cook College Office of Continuing Education and other educational institutions, in-house workshops and bulletins, environmental advocacy groups, peers within the industry, and pesticide manufacturers.

## Credentials of the IPM Practitioner

The IPM practitioner should have the following credentials:

- ♣ Completion of the Rutgers Landscape IPM Short Course or other comparable course in scope and duration
- ♣ A valid Commercial Pesticide Applicator license issued by the NJDEP
- ♣ Certification in Category 6B (Right-of-Way Pest Control)

## Minimum Criteria for IPM:

## Monitoring

Railroad rights-of-way must be monitored (inspected) on a regular basis for integrity of the track. This process involves regular inspections under stringent federal guidelines. These inspections take place several times a week, and more frequently during periods of weather extremes. Records of each visit must be kept. If vegetation is present in the track structure or obstructing lines of sight, this must be noted and a course of action ***must*** be formulated to address control of the vegetation.

Weeds or grass gradually invading or germinating in a track area can be monitored during inspection periods. This vegetation must **not** be allowed to progress to an unsafe level. Because the track area (ballast structure) does not lend itself to mechanical vegetation control methods, such as mowing or cutting, chemical programs are generally employed to resolve these problems. However, time must be allowed for the chemical program to take effect on the target vegetation.

In certain areas of the property where a fire or high public or employee activity could have serious safety consequences if weeds are allowed to grow, railroads may elect to employ a pre-emergent herbicide as a preventative measure.

## Action Thresholds

An action threshold is a level at which some method of control would be initiated. Action thresholds are determined by such factors as severity of the pest problem, impacts on health and safety, economics and aesthetics related to the pest and user needs for the site where the pest is found. The IPM Practitioner and the customer should determine and record tolerance levels for pests and pest damage. This may vary by pest species or type, and site.

In the railroad environment, the safety of employees, the public and passengers is foremost in the decision to employ a method of control. The level of weed infestation, brush encroachment, or the level of insect or rodent infestation will determine if immediate control is needed. For instance, brush in the winter may not interfere with the line of sight to a signal or road crossing. The same brush in the spring and summer can obstruct the line of sight, creating an “immediate need” to react. Cutting the limbs or brush can temporarily restore the sight line. Usually non-chemical controls are used on these immediate need areas, but are not practical for large areas or many miles of right-of-way.

Proper herbicide selection and application timing is a more preventive approach, and most likely will prevent sight obstructing plants from becoming established, thus reducing immediate need situations.

## Pest Management Methods

Integrated Pest Management techniques will be used for prevention and suppression of pests. These include:

- ♣ Brush and weed cutting for areas outside of the ballast section of track.

- Track surfacing, ballast cleaning (undercutting) to the areas of ballast, ditching and drainage maintenance to those areas immediately adjacent to the ballast.
- Sanitation by removal of trash and garbage along the right-of-way to manage insect and rodent populations.
- Alternative methods of weed destruction such as hot water, steam, or burning where permissible, economically feasible, and in environmentally sensitive areas.

If any insect, disease, or weed problems develop which meet or exceed the pre-determined action threshold amount, and pesticide use becomes necessary:

- Pests should be reduced to below threshold levels.
- Preserving beneficial plants and other organisms should be considered when feasible.
- Consideration should be given to the products and application techniques that lower the level of risk to humans and the environment. For example, a pre-emergent program may be selected because a one-time application can prevent weed growth for an entire growing season thus reducing the need for repeat applications of additional herbicides as new weeds germinate. Promoting beneficial plant growth in areas outside the track structure should be a priority (i.e. Low-growing grasses instead of vines and brush).
- Pesticides shall be applied in accordance with label instructions, at or below label rates, and under appropriate environmental conditions (i.e., no spraying on windy days or immediately prior to forecast of heavy rain).
- Pesticides should be applied through the use of appropriate drift reduction techniques, such as the use of low-pressure sprayers when possible.
- Pesticides should be rotated in use, when possible, to prevent or slow the development of resistant strains of pests that would then require more frequent or higher application rates.

## Documentation & Recordkeeping

Compile a site-specific history of all monitoring observations, pest infestations, cultural procedures, control measures and pesticide treatments made. This should allow each contractor to note the problems associated with each site. In addition, the principles of an IPM program should be written into the contract. Accumulated plant and pest knowledge is used to predict, monitor and detect pest outbreaks. Proactive avoidance of pest problems is desired, followed by early detection and early intervention, once pests reach action thresholds.

An important part of a successful IPM program, for a Right of Way, is the service period of the contracted IPM Practitioner. Many times a service period is not long enough for a good IPM balanced program to become incorporated into many areas. In right-of-way management, owners are best served with a long-term contract. A short-term service period does not allow for all pest management tools to be incorporated. When service periods are long term, year to year comparisons can be made, and there will be enough time to incorporate changes to address new problems or conditions.

- ♣ Records of inspection and treatment shall be maintained noting the vegetation conditions, the control technique(s) used and related comments.
- ♣ Evaluate and record the effects of all control techniques used.
- ♣ Pesticide application records shall be kept as required by the NJDEP pesticide control regulations.

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