St. Lawrence University Integrated Pest Management Plan

approved 1/25/93, revised 4/21/00, 11/29/06

Lawn/Plant Maintenance, St. Lawrence University

Environmental Commitment:

At the October 2006 meeting, the St. Lawrence University Board of Trustees adopted a resolution stating "*the Board of Trustees approves the adoption as one of the University's core values, a commitment to environmental awareness, environmental education and the pursuit of environmental sustainability*". SLU first adopted an integrated pest management (IPM) program in 1993 through a recommendation by the Campus Safety Committee to the President. The plan was revised in April 2000 and November 2006. The IPM is dedicated to the following goals.

To promote a safe and healthy work environment for the SLU community in regard to the care of campus grounds and vegetation.

To inform and educate the community on health and/or safety issues that may result from IPM activities.

To promote community input regarding the IPM activities.

To comply with state and federal codes and laws.

To minimize the institutional risk and liability related to environmental health and safety.

Primary to meeting the above goals is a concentrated effort to reduce and minimize the use of toxic/hazardous chemical herbicides/pesticides (H/P) to a level considered to be absolutely minimal to insure proper maintenance of lawns, shrubs and trees. In relation to the use of such chemicals, the University adopts the principle of ALARA, common to the practice of Health Physics/Radiation Safety. The ALARA principle states that exposure to and use of toxic/hazardous chemicals will be kept at a level **A**s **L**ow **A**s **R**easonably **A**chievable. Every effort will be made to discover and substitute safer, less toxic, natural or biodegradable/bio-compatible products in place of standard chemical use.

IPM Practices:

There are many practices that can be adopted in order to minimize the need for chemical-based pest management.

Promote the optimum physiological health of campus plants. Healthy plants are more resistant to infection and displacement. This can be accomplished through:

Selection of appropriate species/varieties of plants according to hardiness (USDA zone 3 or lower) and site properties (soil, water and light availability). Avoid "mono-culture" tendencies by promoting species diversity. The selection of species that are naturally native to the local area can often enhance this diversity.

Proper fertilization: The use of organic forms of plant nutrients is often beneficial in promoting good soil properties and the sustained release of available nutrients. This might be economically feasible through a composting program, however, such programs must be done in compliance with state and federal codes. The use of locally obtained manure materials is often not feasible on campuses for aesthetic and biohazard reasons. Because of these, most fertilization is accomplished using chemical (inorganic) fertilizers.

Irrigation: The need for irrigation should be minimized through species selection and soil quality improvement measures. Thatch management is also known to improve pest control and irrigation effectiveness. Thatch removal should be performed to allow about 1/2 inch of thickness. If thatch becomes too thick, it promotes insect and microbial pathogen growth. If there is no thatch, there is a notable increase in the evaporation of water and less shading of light sensitive weed seeds. One half inch is a good median.

Physical and operational parameters:

For landscape lawns, mower cutting height should not be set less than 2.5 inches in height. Most weed seeds require light in order to break dormancy and allow for germination. Longer grass shades weed seeds in the soil and thatch thus reducing their germination.

We should also consider restricting the use of salt on sidewalks and roads on campus to prevent the killing of grass adjacent to these areas which then populate rapidly with salt resistant weeds. Although this is a liability issue, salt should be limited to the removal of ice; snow can be removed by the judicious use of plowing and sweeping equipment.

Future construction of walkways should be done so as to elevate the walkway 1-2 inches above the adjacent lawn so that snow removal equipment will not plow the adjacent sod away thus promoting weed establishment.

For some special purpose lawns such as athletic turfs, many of the above practices are impractical. Well founded practices of turf management require increased levels of fertilizer and irrigation as well as more frequent use of some herbicides.

For shrubs and trees, it is rare that insects pose serious problems for the long-term health of the plant. Occasionally, however, certain insect infestations and some fungal/bacterial infections may pose a serious threat and should be dealt with. Most such infestation/infections can be anticipated or, at the very least, recognized in the early stages of development. Upon diagnosis, treatment strategies should be developed using the ALARA principle mentioned earlier. Most insects can be discouraged by using safe oils, surfactants, or biological controls. Chemical pesticides should be used only as a last resort or when another safer, more effective method of treatment is not available. For fungal/bacterial infections, there are few alternatives to the use of chemical control agents. This is especially true for evergreens. Fortunately, there are systemic agents that can be applied safely with little risk for exposure to the public. As with lawns, the best defense against infestations/infections is good physiological health. Shrubs and trees should be provided with adequate food and water, either by good planting practices (location, soil type,

drainage, etc.) or supplementation. Proper pruning practices are important for preventing physical damage as well as aesthetic appearance.

Summary of IPM (non chemical) practices:

Select plant species appropriate to the hardiness zone and site.

Avoid mono-culture practices by promoting plant diversity with native species.

Cut lawns no shorter than 2.5 inches and manage thatch.

Promote good plant health:

Fertilize and irrigate lawns/shrubs/trees as needed.

Avoid physical damage from string trimmers and mower decks.

Mulch and compost when possible.

Prune and thin as needed.

Elevate (1-2") new walkways/roads and consider restricting the use of salt in winter.

Use horticultural oil, surfactants and biological controls whenever possible.

Adopt ALARA principle.

Do not apply herbicides/pesticides prophylactically.

Apply H/Ps during "off hours" or "low-use" times (e.g., Fri evening, vacations, etc.)

Inspect lawns/shrubs/trees regularly.

Get advice when needed - maintain continued training.

Emphasize safety and record keeping.

When the above measures are inadequate to accomplish the goal of a well maintained campus grounds, the use of herbicides/pesticides may be permitted according to the regulations and plans approved by the University Safety Committee.

Herbicide/Pesticide Use Guidelines

for Lawn/Plant Maintenance, revised 1/25/93, 4/21/00, 12/31/06

1. Responsibilities:

The Campus Safety Committee is responsible for developing, updating, auditing, and approving the policies and use guidelines related to the Integrated Pest Management (IPM) program.

The Director of Facilities Operations is responsible for reporting the results of approved IPM plans and for developing annual IPM plans for safety committee approval. These tasks may be designated to the campus grounds manager. The director will also be responsible for compliance to these H/P Use guidelines with the following exception:

The Director of Environmental Health and Safety is responsible, in coordination with the Director of Facilities Operations and/or the Director of Security & Safety, for the decision that climate conditions are appropriate for H/P application (wind, precipitation, etc.) prior to the commencement of application. No H/P materials may be sprayed outdoors when wind speeds exceed 5 mph.

The Grounds manager is responsible for the supervision of those workers involved with H/P preparation and application.

The Director of Security and Safety is responsible for monitoring areas where public access is not appropriate for a considered period of time as well as to coordinate with the directors of Facilities and Operations and Environmental Health and Safety to make the weather decision for H/P application.

2. Annual Report of Previous Year's Activity:

The report on the previous year's activity should reflect:

A review of RESULTS for items "a" through "f" as listed below in section #3 below. Comparative summaries between athletic fields and the rest of the campus will be provided for items a and b.

The application data form of each material application as an addendum.

A running 5 year history, including a coded campus map, of H/P applications so that the Safety Committee can assess the overall and long-range effectiveness of the IPM program..

3. Annual Plan:

The Director of Physical Plant will annually develop a written program of turf/plant maintenance and submit the plan to the Safety Committee for approval. The plan must be submitted before February 1 for that calendar year.

The plan shall include, but not necessarily be limited to, the following points:

a. A list (or table) of weed/pest problems to be considered for chemical treatment and the reason(s) for consideration.

b. The H/P product(s) to be used, target date of use, method of application, wind/weather constraints, and safety personnel protection equipment (PPE, e.g., garments) needed for each.

c. The prospective use of outside contractors. All agreements with outside contractors shall be written agreements and, as an integral part of the specifications, will specify that the contractor will adhere to all applicable laws related to application of the products being applied as well as to relevant University guidelines. Outside contractor is defined as any person(s) or company(s) not employed by SLU.

d. The need for having "repeat" or "ad hoc" applications. Unplanned or emergency applications must be approved by the available members of the Safety Committee before application. If the application proposed is a repeat application due to an unsuccessful result, the plan must indicate the reason for the initial applications failure and the measures taken to ensure that the repeat application will be successful.

e. The approach for assuring that every effort is being made to reduce applications to minimal levels. For each weed/pest indicated on the proposed plan, explain what non-H/P alternatives were considered and the reasons for not choosing the alternatives.

f. Providing evidence that personnel involved with the application of materials and management/oversight of the IPM program are appropriately trained or certified.

4. Guidelines for application:

The Director of Facilities Operations will act as the quality control monitor to ensure compliance with the herbicide/pesticide use policy of the IPM plan.

The grounds manager will inform the Director of Facilities Operations of the intended schedule of approved product application no less than 5 days prior to the start of all herbicide/pesticide use on campus for the growing year. If the entire schedule is not decided or known at that time, subsequent schedules will be provided to the Director no less than 5 days prior to application.

The grounds manager will ensure publicizing, at least 5 days in advance, of the scheduled application(s) for any given **week** to all community constituents. This will be done through published campus electronic media including the employee, facstaff, and student listserves. Announcements of the weekly applications will list:

a. The name and type of chemical to be used.

b. The time frame of application as specifically as possible.

c. Purpose of the application.

(e.g., Trimec herbicide will be applied between 7:00 AM and 2:30 PM, weather permitting, to control broadleaf weeds.)

d. The location(s) of the intended application (e.g., "roundup herbicide will be applied on mulched areas, fence lines, curbs, sidewalks, and parking lots." Or, "Trimec herbicide will be applied to grass lawns around, Payson, Piskor, and Carnegie Halls and on lawns along Park Street"). This description should be specific enough such that community members who are concerned with potential health effects of the product(s) used can 1. Identify where the application is near their workplace and 2. choose to avoid attendance at work for the given time of application. A campus map indicating the areas of application for the upcoming week will also be published either with the announcement or on the EHS webpage.

e. Any applicable comments in terms of limited public use and hazard (risk). (e.g., "Some persons may be sensitive to direct skin contact with this product.") This section of the announcement should close with the statement "The areas of application will be marked with warning signs. Please do not enter these posted areas".

f. The announcement will conclude with the statement:

"Any problems and/or concerns from community members should be reported to one of the following:

Director of Environmental Health and Safety (5913)
Director of Facilities Operations (5632)
Director of Security and Safety (5609).

Also, the Material Safety Data Sheet(s) for all applied products are available for examination at the Environmental Health and Safety office".

The Grounds Manager, the Director of Facilities Operations, the Director of Security and Safety, and the Director of Environmental Health and Safety will have the responsibility to delay or postpone H/P application because of weather conditions or possible wind drift precautions. Any apparent violation of applications procedures shall be reported as soon as possible to the above persons. They shall have the responsibility and the authority to demand immediate cessation of any application which is not being made according to applicable laws and University guidelines. They may allow the application to proceed if any violation is corrected. Any such violations shall be reported to the Safety Committee at the next available meeting.

Prior to H/P application, the area to be treated will be clearly marked with an appropriate number and placement of warning signs. The signs will remain in place for a time period appropriate for the material used.

Security will routinely monitor treated areas to limit access for specified periods of time appropriate for the material used.

5. Record Keeping:

Facilities Operations shall record all pertinent data concerning the application of the covered product using forms developed by the Safety Committee. Copies of the data will be kept on file by both the Environmental Health and Safety Office and Facilities Operations. MSDS sheets for all materials approved for use under this program will also be kept on file by both offices.

An annual report summarizing the previous year's applications and results will be prepared by the Director of Physical Plant and submitted to the Safety Committee prior to **February 1.**

Data record shall include:

Product used; identified by common name and by chemical makeup.

Date used, time used.

Amount used, including total used, rate used, and total area (acres, sq. ft., etc.) covered.

List of safety equipment used by applicator(s).

Description of weather/wind conditions.

Name of person(s) applying product.

Signature of the supervisor verifying that the information recorded is correct.

A map of the campus clearly indicating date and specific locations of the application.

Result(s) of application - recorded from inspection at a time interval post-application appropriate for product used.

A master map indicating the cumulative applications should be kept in the Facilities Operations office as a summary for reporting.

Pesticide/Herbicide Use Record

Date of application _____ Time of application _____

Location of application _____

Product Common Name _____ Form = L S G

Product Chemical Name _____

Total amount used _____ Rate of application _____

Total area covered _____

Safety equipment used _____

Weather/wind _____

Persons (firm) doing application _____

Supervisors signature _____

Result(s) of application:

Date of inspection _____ Inspected by _____
Comments:

Use a highlighter to indicate the area(s) of material application.
Use a separate data sheet and map for each material applied.