

# **Integrated Pest Management Plan for Eau Claire Area School District**

## **Introduction**

Insects, weeds, and rodents are undesirable residents of a school setting. These pests cause damage to the school building, food supplies, and students. Some can sting, bite and cause severe allergic reactions. Pests need to be controlled in the school setting, but there are better options available than traditional pesticide use.

Traditionally, pesticides are the first line of defense against pests. Pesticides are used regularly, both when actual pest problems exist and to prevent future pest problems from occurring. The problem with this method is that pesticides are potentially harmful chemicals that can harm humans upon exposure. This means that both pests and pesticides are undesirable in the school setting. Because children are still growing and developing physically, pesticide exposure to children is more harmful than adult exposure. Schools, therefore, should carefully evaluate their methods of pest control.

There are other ways to manage pest problems and benefits that come with them. Often sanitation and maintenance can keep pest problems from occurring by paying attention to pest habits and needs. Trapping pests can sometimes replace pesticide use for pest control. Sometimes pests are seasonal problems and will leave within a few days without any control at all. Wise and judicious pesticide use can greatly reduce the risk of pesticide exposure and the amount of pesticides used. Using fewer pesticides for pest management also often reduces the costs of pest management. For these reasons and others, it is wise to incorporate other methods of pest management into your school.

The Department of Agriculture, Trade, and Consumer Protection supports the use of an Integrated Pest Management approach to managing pests in school settings. Integrated Pest Management (IPM) is an approach to pest control that focuses on minimizing pest problems by making an environment unfavorable to pest inhabitation. School staff will frequently monitor for pests, and if they are seen, there will be an attempt to remove the problem without pesticide use. If the pest problem still exists after these measures are taken, responsible; controlled; and targeted pesticide use will be carried out to remove the problem. Minimally toxic pesticides that will reduce human exposure (such as baits) will be used whenever possible for these treatments. An IPM approach to pest control, when used properly, will reduce both pest problems and potential pesticide exposure.

**Revised: August, 2012**

## ECASD Integrated Pest Management Plan

### **ECASD INTEGRATED PEST MANAGEMENT (IPM ) POLICY**

This program requires the involvement of all our Head Custodians, Building Services Managers, and grounds personnel. The intent is to identify a potential pest problem before it becomes serious; thus we can treat smaller areas by spot treatment. We strive to use as few pesticides as possible and in quantities that have little adverse affect on the environment. Identification of a problem requires a certain amount of horticultural knowledge and experience that we try to instill in our workers both by in house methods with seasonal employees and through short courses and seminars. The goal is to give our workers enough information so if something does not look right in the landscape, even without knowing precisely what the pest is, a prudent decision can be made on treatment. We do not strive for 100% pest-free grounds, but a degree of tolerance is accepted that does not adversely affect the health of the landscape plantings, turfgrass, and District grounds appearance. By implementing the correct cultural practices listed above, we hope to have success in growing a healthy landscape that requires limited pesticide use and is naturally resistant to pests.

We also strive to work hand in hand with the Department of Agriculture, their extension offices, and other turfgrass professionals to ensure our methods are correct. Agricultural techniques and practices are always evolving and the District Buildings and Grounds staff strives to keep abreast of updated and improved techniques. Memberships in professional organizations include The Wisconsin Association of School Business Officials, and the Wisconsin Turfgrass Association.

**Revised: August, 2012**

# What is Integrated Pest Management?

Integrated Pest Management (IPM) is a decision-making process that uses all available pest management strategies to prevent economically damaging pest outbreaks while reducing risks to human health and the environment. IPM is a continuum along which there are many levels of adoption. It can range from simple monitoring to properly timed pesticide use all the way to "biointensive" IPM in which there is total elimination of synthetic pesticides such as in organic farming.

### **Goals of IPM**

#### **IPM in schools protects human health by :**

- Suppressing pests that may carry disease
- Reducing pest damage,
- Reducing environmental pollution, and
- Reducing human exposure to pesticides.

In an IPM program, treatments are not made without first monitoring the situation and evaluating whether a pest is likely to be a problem. In schools, there are three injury levels used to determine when to implement pest management strategies:

- ***Economic Injury Levels*** determine the level of damage to a structure or plant. Once damage has reached a level that is severe enough to cause economic loss, control should be implemented. An example would be a termite infestation that requires replacement of some structure.
- ***Aesthetic Injury Levels***, are the levels at which a pest becomes a nuisance for whatever reason. Perhaps this is the level at which an aphid population drops enough honeydew onto a picnic table beneath a shade tree to disturb the people using the table. Aesthetic injury levels are subjective, that is, what one person tolerates may not be tolerated by another.
- ***Medical Injury Levels*** are used whenever a pest can cause illness to humans either directly or indirectly. Rodent-transmitted diseases would be one example.

### **COMPONENTS OF AN IPM PROGRAM**

All IPM programs, regardless of the situation, share the same components.

- monitoring the pest population and other relevant factors
- accurate identification of the pest
- determining injury levels and thresholds that trigger treatments
- timing treatments to the best advantage
- spot-treating for the pest
- selecting the least-disruptive tactics
- evaluating the effectiveness of treatments to fine-tune future actions
- educating all people involved with the pest problem

# ECASD Integrated Pest Management Plan

## **IPM is a Decision-Making Process**

IPM requires continuous assessment of a situation. There are four key questions that must be answered before implementing any management strategy:

### ***1) Is treatment necessary?***

The mere presence of a pest doesn't necessarily warrant treatment. Sometimes a fairly large population of pests can be tolerated while other times the presence of a single pest is intolerable. In addition, the determination of treatment will vary among individuals.

### ***2) Where should the treatment take place?***

Pest managers must look at the whole system to determine the best place to solve the problem. Apply treatments where the actions will have the greatest effect. In order to do this you must completely understand the biology and behavior of the pest at hand.

### ***3) When should action be taken?***

Timing is very important. There are optimum times in both insect and disease life cycles when they are most susceptible to control. Again, it is very important to understand the biology and behavior of your pest.

### ***4) Which strategies should be used?***

IPM uses a multi-tactic approach. Because biological systems are complex, management strategies must also integrate several strategies. Rarely will a single tactic solve the problem for long. Implementing an IPM program means taking a "whole system" or ecosystem approach to solve a pest problem. You must think of both the living and non-living components when determining which approach to take. Each component has an impact on every other component. This manual will help you look at the specific pest problems you are likely to encounter using a system approach. It will also help you develop an integrated management plan to deal with the problem.

There are four control strategies that can be used in developing an IPM program.

- ***Cultural*** control uses fertilization, irrigation, site selection, plant selection and/or sanitation to prevent pest problems in the first place
- ***Physical*** control is another preventative strategy. It includes screens or other barriers, temperature and humidity modification, traps, physical repellents, and hand removal of weeds.
- ***Biological*** control uses beneficial organisms (insects, bacteria, etc.) to control pests. IPM programs seek to conserve naturally occurring beneficial insects by providing them with food and shelter and not using broad-spectrum insecticides that will inadvertently kill the beneficial insects.
- ***Chemical*** control is used only after all other suitable control strategies are not fully effective or practical. Always use chemicals in an environmentally responsible manner and in accordance with the label.

### **Sanitation - Indoors**

- Clean all areas of the school regularly.
- Pay special attention to cleaning areas where food is eaten, stored, served, cooked or disposed.
- Keep areas with pets clean. Store all pet food in pest resistant containers.
- Keep areas around sinks and toilets dry.
- Clean up spills as they happen. Possibly make spill clean up the responsibility of the group that makes them.
- Focus cleaning efforts on areas that have more pest problems
- Remove trash more frequently in problem areas. Empty any trash receptacles that have food or food-related items in them at least daily.
- Maintain school interiors to reduce the areas where pests can hide and to reduce food and water sources.

### **Sanitation - Outdoors**

- Clean areas around dumpsters and outdoor trash receptacles at least once a week.
- In (at least) the late summer and early fall try to keep trash receptacles away from areas where children play outdoors because trash receptacles attract wasps, other insects, and rodents.
- Keep grass and brush along the sides of the school well trimmed. A two foot vegetation free barrier of stone or dirt around the school is ideal.
- Pick up outdoor trash regularly. Too much clutter can interfere with plant and grass growth and food and drink containers will attract wasps and other insects.
- Manually remove weeds whenever possible.

### **Maintenance/Pest Exclusion-Indoors**

- Screen all windows that will be opened.
- Keep all screening in good repair.
- Caulk or fill all holes and cracks in the walls, around pipes, etc.
- Fix leaky or "sweaty" piping to reduce water supplied to pests.
- Use pest-resistant food storage containers for pet or human food. These containers will be plastic or glass containers with a tight seal that can be closed easily.
- Make sure all doors that lead outdoors are self closing, or if they will be kept open, have another self closing screen door present.
- Doors should be tight fitting with weather-stripping and door sweeps to keep out crawling pests.

## **Maintenance/Pest Exclusion-Outdoor Animals**

- Use pest resistant, self-closing trash receptacles and dumpsters. Keep them closed and remove garbage before it keeps the trash receptacle or dumpster open.
- Do not allow high grass or shrub areas to border athletic fields and other turf areas.

## **Maintenance/Pest Exclusion- Weeds**

- Mow turf frequently, ideally cutting less than 1/3 of the grass height with each mowing.
- Fertilize turf at appropriate rates and times.
- Irrigate turf so grass receives an inch of water a week.
- Use aerification of the soil to improve the performance of athletic turf
- Topdress turf areas for better performance of athletic turf.

## **Monitoring**

- Monitor for pests routinely. Incorporate monitoring into other activities such as cleaning or mowing the lawn.
- Look for pests or evidence of pests (droppings, chew marks or other damage).
- Routinely check these key areas:
  - Food storage and preparation areas.
  - Garbage storage areas.
  - Areas round water pipes in kitchen and bathrooms (and anywhere else they are).
- Place sticky traps in key areas (useful for insects as well as rodents). However, ensure these areas are inaccessible to children.

## **Record Keeping**

- Keep records for both pest sightings and pesticide use on school grounds. Knowing where, when, and what pests are seen on school grounds will help focus pest control efforts and will be helpful to professional pest control operators.
- Maps of the school building and grounds will aid in describing where pests are sighted and pesticides are used.
- All staff should contribute to pest sighting logs.
- Pesticide use logs should be filled out by the person applying pesticides.

## Considerations and Precautions to take in Selecting and Using a Pesticide

- Monitor for pests. Only treat a problem if insects are present in the school at an unacceptable level.
- Identify the pest and understand its biology.
- See what measures as far as site modification, sanitation and exclusion can be utilized.
- Look into the effectiveness of pest trapping for pest control.

***If the above suggestions do not provide control of the problem, pesticides may be necessary.***

- Choose products wisely.
- Choose pesticide baits over sprays when possible.
- Try to use products with the lowest level of risk. All pesticide product labels have "signal words" that help identify the level of risk. Pesticides with the signal word "caution" have the lowest level of risk.
- Use all pesticides with care. Choose pesticides with the least potential for exposure. Use pesticides only when and where people cannot be exposed to these pesticides through direct contact, inhalation of vapors, or allowing premature access to a treated area.
- If pesticides are used, apply them at times when the building will not be occupied for an extended period of time, especially when children are not present.
- If pesticides must be used when children are present, isolate treated area from any human activity.

## Pesticide storage

- Pesticide Storage cabinets are located at North High school, Memorial High School and the ECASD Service Center.
- Each Certified Applicator will be in charge of a set of three keys for access to the cabinets.
- Copies of these keys are available from the ECASD IPM coordinator.

# Posting of Pesticide Applications

On-site information about pesticide applications will help reduce pesticide exposure, and for some pesticide applications, posting of pesticide application information is required by state law in certain situations (ACTP 29, Wis. Adm. Code and s. 94.715 Wis. Stats). Students and staff have the opportunity to avoid treated areas when the areas are properly posted.

### When is posting required for pesticide applications?

Landscape pesticide applications made by certified school staff or any commercial pesticide applicator **must** be posted with warning signs **before** the application is made. Landscape pesticide applications include all insect, fungus, and weed killer applications (including weed and feed products) to turf, mulch or gravel beds, flowers, shrubbery, and trees on school property.

All pesticide applications (excluding sanitizers, germicides and disinfectants) to a school building or school grounds of a public school district must be posted. Examples of pesticide applications in a school include ant baits, wasp sprays, cockroach sprays, and rodent baits.

### Where must signs be placed when posting is required?

Warning signs must be posted so that they are clearly visible from each point of entry into the treated area. Warning signs for landscape applications should be visible from roads, sidewalks, driveways, doorways, alleys, or adjacent yards. Warning signs are not required in areas where a fence, wall, hedge, or similar structure effectively prevents human access to a treated landscape. If an area is fenced, warning signs must be posted near the gate area.

Indoors, signs must be posted so that they can be seen before someone enters a treated area. The most likely areas to post are the entrances to the room or treated area.

### How long must signs remain in place?

Warning signs must be posted before the application. Many commercial applicators post just before starting an application. Signs must be posted even if the pesticide label does not state a prescribed re-entry interval.

All postings on public school district grounds must remain for a minimum of 72 hours and the same applies for the reentry interval as well.

Signs posted for pesticides that have a prescribed reentry interval must remain in place for the entire reentry interval, and the date on which the reentry interval expires must be written on the sign.

All signs must indicate the date on which they may be removed.

### What information must warning signs contain?

Warning signs must be at least 4 inches by 5 inches, have a white background with red lettering and be attached to a stable supporting device. The use of vinyl flagging material is permitted as long as the information on the sign is visible when posted. Vinyl flags that fold over themselves when posted are unacceptable. Signs must be professionally printed, only the date on which the sign may be removed may be written by hand.



## ECASD Integrated Pest Management Plan

Warning signs must contain the wording:

"PESTICIDE APPLICATION PLEASE KEEP OFF" in not less than 36-point type and in not less than 9-point type "DO NOT REMOVE UNTIL SUNSET ON [insert date] FOR ADDITIONAL INFORMATION ON THIS APPLICATION OR ANY FUTURE APPLICATIONS CALL [insert name and telephone number the applicator's employer or business] THIS SIGN IS REQUIRED BY THE DEPARTMENT OF AGRICULTURE, TRADE, AND CONSUMER PROTECTION (608) 224-LAWN"

A sample sign is located within the Forms section of this manual. These signs are available for purchase. Contact the Department of Agriculture, Trade, and Consumer Protection for a list of sign manufacturers.

### **What information must be provided to the public upon request?**

Persons wanting additional information about a specific landscape pesticide application may request information from either a commercial applicator (for hire or not for hire) or commercial application business.

The applicator or business must notify the requester that the following information is available:

- The complete name and address of the person making the application or the business entity (e.g., school). The common chemical or brand name of each pesticide applied and the EPA registration number of that pesticide.
- The concentration and total quantity of each pesticide applied, or the amount of pesticide active ingredient applied per unit area, and the total area treated.
- The date and approximate time of application
- Any post-application precautions stated on the pesticide label including precautions related to re-entry into or use of treated areas.
- A copy of the pesticide label for each pesticide applied.
- The applicator or business may provide the information requested either orally or in writing (if a pesticide label is requested, a direct copy of the label must be provided). The commercial applicator or business may require the requester to pay reasonable copying and postage costs before providing a copy of a pesticide label.

# Legal requirements for Pesticide Use

State and federal law regulate pesticide use. The **DATCP 29**(Department of Agriculture, Trade and Consumer Protection) is the regulatory framework for pesticide use in Wisconsin. The **Federal Insecticide, Fungicide and Rodenticide Act** (FIFRA) provides the basis for regulation, sale, distribution and use of pesticides in the U.S. FIFRA authorizes EPA to review and register pesticides for specified uses.

General restrictions on pesticide use that must be followed include:

- All pesticide use must be consistent with the label. Any pesticide use that is contrary to the label may be considered illegal.
- Only apply pesticides to sites allowed on the label
- Only apply pesticides in manners allowed on the label.
- Do not apply pesticides at a concentration or rate greater than allowed on the label
- The label may require you to follow specific guidelines, such as:
  - Use of personal protective equipment.
  - Time interval during which the treated area cannot be used.
- Posting of warning signs. The label may require a specific sign. State law may also require posting not mentioned on the label.
- All pesticide use must stay on the application site. Pesticide that is applied directly to another person's property (overspray) or that moves off of the application site to another property (drift) is illegal.
- Persons wanting additional information about a specific landscape pesticide application may request information from either a commercial applicator (for hire or not for hire) or commercial application business.
- The applicator or business must notify the requester that the following information is available and provide this information upon request:
  - The complete name and address of the person making the application **or** the business entity (e.g., school)
  - The common chemical or brand name of each pesticide applied, or the amount of pesticide active ingredient applied per unit area, and the total area treated.
  - The date and approximate time of application.
  - Any post-application precautions stated on the pesticide label including precautions related to re-entry into or use of treated areas.
  - A copy of the pesticide label for each pesticide applied.
- The applicator or business may provide the information requested either orally or in writing (if a pesticide label is requested, a direct copy of the label must be provided). The commercial applicator or business may require the requester to pay reasonable copying and postage costs before providing a copy of a pesticide label. Commercial applicators for hire are also required to maintain records of all pesticide applications.

## Wisconsin Statutes for Pesticide Use on Public School Grounds

Wisconsin's School Pesticide Use Law (**s. 94.715, Wis. Stats.**) guides the use of pesticides on public school property.

### DEFINITIONS

Wisconsin statute[ **s.94.67 (25),Wis. Stats**] defines "pesticide" as:

Any substance or mixture of substances labeled or designed or intended for use in preventing, destroying, repelling or mitigating any pest, or as a plant regulator, defoliant or desiccant. In essence, a pesticide is any substance commercially used or distributed with the claim to be useful in controlling a pest.

**"Pesticide"** is the broad category that includes many subcategories including but not limited to

- Herbicides (plants)
- Fungicides (fungi and molds)
- Rodenticides (rodents)
- Termiticides (termites) and
- Algaecides (algae)

### Common products that are 'pesticides' include:

- Baits
  - Ant
  - Cockroach
  - Rodent
  - Containerized
  - Gel
  - Liquid
- Herbicides
  - Weed and Feed Products (fertilizer with weed control)
  - Round-up® (glyphosate)
- Aerosol sprays that kill, repel or otherwise control (ant & wasp spray)
- Insect growth regulators

### School Grounds

Areas defined as "school grounds" include all real estate and structures owned and/or operated, rented or by other formal agreement gives property access rights and control to the school district. Examples may include but are not limited to:

Classrooms,  
Athletic fields,  
Playgrounds,  
School forests, and

Privately and publicly owned land leased by or donated to the school/school district.

The definition of "school grounds" is a function of ownership and/or control and it applies whether or not children are ever present on the property.

# ECASD Integrated Pest Management Plan

## **Exemptions**

Even though children are never present on a particular property that the school district owns, these grounds are not exempt. One example is an off-site school kitchen facility. Because the food service operation is owned and/or operated by the school, this law covers it.

## **Exclusions to the "school grounds"**

Land owned by the school, but leased or otherwise consigned to non-school occupants and not used for official public school activities. An example is school owned land that is rented for cropland by a farmer.

## **PESTICIDE USE LAW REQUIREMENTS (s. 94.715, Wis. Stats.)**

### **94.715 Pest management for schools.**

(1) "Pesticide" has the meaning given in s.94.67 (25), except that "pesticide" does not include a germicide, sanitizer, or disinfectant.

### **(2) REQUIREMENTS FOR SCHOOL BOARDS.**

A school board shall do all of the following:

- Authorize pesticide application in a school or on school grounds to be conducted only by persons who are certified by the Wisconsin Department of Agriculture, Trade and Consumer Protection in the appropriate use categories under s. 94.705.
- Post notice of each pesticide application in a school or on school grounds at the time of the application and for at least 72 hours following the application.

## **APPLICABILITY OF PESTICIDE USE LAW**

The pesticide use law (s. 94.715, Wis. Stats.) applies to Wisconsin public schools grades kindergarten through 12 (K-12).

## **EXEMPTIONS TO THE SCHOOL PESTICIDE USE LAW**

Sanitizers, germicides, and disinfectants need not be applied by a certified applicator, nor the treated area posted for this type of application.

Examples for sanitizers, germicides and disinfectants include:

- **Routine Cleaning Products**
  - Floor cleaners
  - Surface cleaners
  - Toilet sanitizers
  - Bleach
- **Pool Maintenance Chemicals**
  - Usually considered sanitizers, germicides, or disinfectants. If the label contains claims other than sanitizer, germicide or disinfectant, contact DATCP for clarification.
- **Fertilizers without pesticides in them.** (Weed and feed products ARE pesticides.)
- **Rodent traps.**
  - Glue traps
  - Snap traps
  - Mechanical traps
- **Repellants** may be applied by an uncertified individual who is medically licensed (per ch. ATCP 29.25, Wis. Adm. Code) or to oneself.

## ECASD Integrated Pest Management Plan

- **Easements** -- Though not required, schools may want utilities or others with easements through school grounds to notify the school when pesticides are going to be applied in the easements. School administrators may want to anticipate this possibility and ask for advance notice of those applications.

Wisconsin rules require that both the school, as a consumer, and the commercial application business, share responsibility for legal use of pesticides on school grounds. Commercial application businesses must offer the school a copy of the label, the amount used, location and reason for the application and other information specified in ch. ATCP 29 Wis. Adm. Code. If a Restricted Entry Interval (REI) is required; the applicator is required to ensure the REI sign is posted. Removal of the REI sign is the school's responsibility.

### **Certification and Licensing Requirements:**

State law requires that pesticide applicators be certified and/or licensed to apply pesticides if the applicator or pesticide use meets certain criteria. Pesticide applicators must be certified and/or licensed to apply pesticides in the following situations:

- Applying pesticides "for hire". Individuals applying pesticides in exchange for a payment, or "for hire", must meet the following criteria:
  - Be working for a licenses pesticide application business.
  - Be a certified commercial pesticide applicator.
  - Be a licensed pesticide applicator.
- Applying a restricted use pesticide. Restricted use pesticides can only be purchased and applied by a certified applicator. Private or commercial certification may be adequate depending on the situation. Licensing fees are only necessary if the application is "for hire". A pesticide product's label states if the product is restricted-use.
- Applying pesticides to school buildings or grounds in a public school district. All pesticides, excluding sanitizers, germicides, and disinfectants, applied in a school or on school grounds in a school district must be made by an applicator certified in the appropriate category(ies) (usually commercial). Licensing is also required, but school employees are exempt from paying the license fee.

# ECASD Grounds Maintenance Policy

### Grounds Maintenance Program

The mission of our program is to maintain the grounds of all our school, service and administrative buildings in an aesthetically pleasing and safe condition. These areas include all lawns, trees, landscape plantings, athletic fields, parking lots, sidewalks, and roadways. We maintain these areas in a safe and attractive condition within provided budgets.

The maintenance program is initiated by Building Services Managers, Head Custodians and Grounds Maintenance staff under the guidance of the Director of Buildings and Grounds. Our own staff performs most labor-intensive work. Agricultural chemical applications and major tree work is done through the services of a professional turf and tree maintenance contractor when needed. The contractor must be a certified pesticide applicator and licensed by the State of Wisconsin to do such work. The Director of Buildings and Grounds supervises the contractors and no work can be performed without authorization and proper notification.

In 1998 the District switched to an IPM program (Integrated Pest Management) and was chosen to pilot IPM by the Wisconsin Department of Agriculture. Our maintenance operation may include insect traps and field monitoring for weeds, insects, and disease in the lawns and landscape plantings. By following a program of this type we make pesticide applications only when necessary. Applications of herbicide and pesticide are most often done by "spot" treatment only to the plant or area infested. This method greatly reduces the need for blanket applications and decreases the amount of pesticide use. Preventative pesticide applications on District grounds will only occur under unusual circumstances. Correct cultural practices are a key ingredient of our program and include seeding of lawns and fields with varieties of grasses that perform well in our area and are resistant to heavy athletic use. We also stress liming and fertilization based on soil test results, soil aeration, topdressing, proper mowing height, and irrigation if possible. The intent is to maintain a healthy stand of turf and ornamental plantings that will withstand occasional pest infestations and require limited use of pesticides.

Soil samples are done on a rotating schedule to determine nutrient and lime requirements necessary for good turfgrass growth. Some athletic fields may require frequent testing. We will also run "test plots" to determine the effectiveness of fertilizers and herbicides.

In the event a situation arises that warrants a second opinion we involve experts from the County Extension Office or seek advice from turf grass professionals. The Director of Buildings and Grounds will make final decisions on problem treatments.

Standard procedure is to remove all dead and diseased trees from District property except certain areas that are inaccessible because of woodland conditions. In the event a situation becomes potentially dangerous, work will be done as quickly as possible. Wood will be disposed of at our dumpsite or given to employees for firewood. We will make every effort to preserve our District tree population to include replacement of lost trees.

# ECASD Integrated Pest Management Plan

We have a training program that will include ground maintenance techniques and topics aimed at identification of problems. The grounds staff is encouraged to attend horticultural seminars and training programs offered by the County Extension Office or Professional Turfgrass organizations.

## **Applications**

1. **Fertilizer:** All applications are done to maintain healthy grass and to promote aggressive growth with the intent to crowd out undesirable weeds. Applications will be tied to soil analysis. Most areas receive one application during fall, September-October, two applications during spring, April-June and one application during summer, August. Applications are either liquid or granular. The source of nitrogen preferred is of the slow release type to lengthen green up time and prevent leaching. We do not use phosphorous as a fertilizer additive. As budgets permit we will integrate organic fertilizer. At this time, organic varieties are much more expensive.

2. **Herbicides :** Weed killers are to be used as spot treatments that are, treating only areas that warrant the use of herbicides to eliminate an infestation that is severely competing with the desirable turfgrasses. Our IPM program requires that we monitor all areas to determine treatments. In some cases solutions may require re-seeding or over seeding to enable reestablishment of turfgrass. Our maintenance program will not normally include broadcasting of herbicides over entire District grounds. Our goal is not to have perfectly weed free lawns but areas that are mostly desirable grasses that provide a safe, comfortable, and attractive ground cover. Broadleaf weeds are controlled with non 2-4-D herbicide, generally a spring or fall application. Crabgrass on athletic fields is controlled with pre-emergent products, generally a late Fall-early Spring application based on previous germination and emergence monitoring. We use corn gluten based products to control both broad leaf and crabgrass. We do not use 2,4-D on any District grounds.

3. **Pre-Emergents:** The only pre-emergents used will be corn gluten based and non 2-4-D products. Depending on test results our maintenance plan may include increased efforts in this area. The use of these products will be in conjunction with a lawn establishment and maintenance program to re-vegetate the treated areas with desirable grasses.

4. **Total Vegetation Control:** TVC is an important practice in our maintenance program. These applications significantly reduce the amount of manual weeding in many areas such as fence lines, signposts, parking lots, curb lines, and sidewalks. We use Roundup very sparingly and only with approval of the Director. The herbicide of choice is an organic, citrus based product. This application is usually performed once and is done from late spring to early summer, depending on weed emergence and growth. Secondary applications are done on a case-by-case basis.

5. **Fungicide:** We have not experienced a great need to apply fungicides. Fungicide use is based upon confirmation of a problem. We monitor athletic fields, where fertilizer and irrigation may create conditions that would allow fungal growths. We monitor soil pH as well to eliminate conditions that would create growths of fungus.

6. **Turf Insecticides:** We use turf insecticides on a very limited basis only to control serious infestations of insects and larvae. Most of the damage is from beetle grubs and moles feeding on grubs.

## ECASD Integrated Pest Management Plan

7. **Tree Spraying:** Tree spraying is done only as pests or larvae are observed. We do react to tent caterpillars and other pests as they are observed on ornamentals and shrubs. We do not treat for Dutch Elm or Oak Wilt at this time.

8. **Liming:** Application of lime materials is done during late fall or spring. All applications are done in accordance to soil test results with the objective to raise soil pH to suitable ranges for optimum grass growth.

### **Cultural Methods**

1. **Mowing:** All District lawns are mowed on a weekly basis at approximately a 2 to 3 inch cut. All grass clippings are left to decompose naturally. Athletic fields are mowed approximately 1-1/2 -2 inches during the season and 3-4 inches during the off season depending on the sport. Some of the fields are mowed more frequently to encourage grass tillering and dense turfgrass surfaces.

2. **Seeding:** Worn or bare areas on district lawns and athletic fields are reseeded in the spring between April 1 and May 15 and fall between August 15 and October 15. Most of our reseed efforts are directed at repairing snowplow damage and maintaining soccer and football fields. These fields get extensive use during all three seasons. We manage use by a field rotation system and are looking at the possibility of moving actual field boundaries to reduce wear in front of goals and between hash marks. Most of the reseeded is done with a mechanical slit seeder or vibratory over seeder. We also test different species of grasses to determine which mixture is best for high traffic areas.

3. **Aeration:** Most aeration efforts are directed at athletic fields. They are aerated 2-4 times annually to reduce soil compaction and improve growing conditions. We are exploring some of the new technologies such as deep turf aeration to see if it would benefit our fields. We have also given more attention to lawn areas in attempt to create better turf conditions.

4. **Irrigation:** Older school lawns rely on natural rainfall for irrigation, and during summer droughts many of the lawns go dormant. Most of the athletic fields are irrigated regularly and most new facilities have automatic systems. We irrigate fields with about 1 inch of water per week.

5. **Composting:** During fall and spring leaves and debris are raked so not to smother grasses. We are exploring the possibility of composting all leaves, tree and shrub prunings, and excess grass clippings; then recycling them back as top dressing for the athletic fields. We currently dress many of the ornamentals with basswood or hardwood chips.