City of Canandaigua
Turf and Landscape Management Policy

Background and Purpose:
The City of Canandaigua Park's Bureau manages 140 acres of grass turf and several acres of landscaped areas for multiple uses. The types of uses range from grassed areas in front of public buildings that receive little direct use to sports fields that receive intensive use. The type and intensity of turf use directly influences the level of management of specific areas. The more intensive use areas (such as sports fields and high use park areas) are more susceptible to damage and eventual pest infestation. These higher intensity areas require a more aggressive management approach in order to maintain a healthy/dense turf and landscaped area.

Management of turf and landscaped areas occasionally requires the use of fertilizers to maintain a healthy dense turf along with the use of pesticides to control pests that adversely affect or destroy these areas or, in some cases, negatively impact the park user's enjoyment of these resources. Pesticides may also be used to remove invasive species that have a substantial negative impact on habitat or in some cases are harmful to humans (e.g., Giant Hogweed). On average, the City has applied pesticides to its turf areas every 5 years with a range of 3-8 years based on the park. According to Cornell Turf Management Researchers this is a very low application frequency.

In order to further minimize the use of fertilizers and pesticides while successfully managing its turf and landscaped areas, the City has established the following policy to utilize an Integrated Pest Management (IPM) program combined with sound agricultural and horticultural practices. The purpose of this policy is to guide the City in successfully managing these lands for their multiple uses while protecting City staff, park users and the environment. There are several interrelated components to the City's Turf and Landscape Management policy. They include:

- An educated staff,
- current inventory of each of the City managed lands,
- monitoring to identify potential pest problems as soon as possible,
- implementing management practices to improve the health and density of the turf and landscaped areas
- establishing pesticide use thresholds
- proper pesticide use

Education:
The employees of the Park's Bureau are continuously trained in the latest Integrated Pest Management techniques. They annually attend conferences that provide the latest scientific research on managing turf and landscaped areas in a way that minimizes the use of pesticides and fertilizers. They are also utilizing various web resources and Cornell University staff to stay up to date on the implementation of IPM programs. An educated staff is the key to successfully implementing the City's turf and landscape management policy.

Inventory:
City Parks Staff inventory the condition of turf, trees and other landscape plants along with the associated usage of the property. The inventory can also identify what management practices may be used to maintain a healthy dense turf.

Monitoring:
Not all insects, weeds, and other living organisms require control. Many organisms are innocuous, and some are even beneficial. The City's policy is to monitor for pests and identify them accurately, so that appropriate control decisions can be made in conjunction with action thresholds. This monitoring and identification removes the possibility that pesticides will be used when they are not needed or that the wrong pesticide will be used.

Monitoring is the actual inspecting of the City properties (1-5 times a growing season) for levels of pest infestation. This may also include soil and tissue tests for proper fertilization rates. Constant monitoring allows turf and landscape managers to recognize pests levels at early stages and alleviate problems with less cost and closure of areas to the public.

Management Practices:
There is a wide array of tools that the City Parks Bureau uses to manage its turf and landscape areas in a way that minimizes the need to use fertilizers and pesticides. The practices summarized below are critical to allowing grass to maintain a competitive advantage over weed species. The following is a small sample of the many management practices the City uses to maintain a healthy dense turf.

- **Irrigation systems** provide many positive effects on the turf area that helps grass out-compete weeds. The most important is the ability to grow cool season grasses in the summer when non-irrigated turf is dormant. Irrigation systems allow the City to stretch the growing season to maintain a healthy existing turf and it also allows for renovations. Two areas where irrigation systems were installed and have been successful are Kershaw Park and Northeast Park. These are high use areas and irrigation plays an important role in maintaining a healthy dense turf while minimizing the use of fertilizers and pesticides.

- **Aeration**, which pulls plugs of soil from the ground, produces a soft zone three inches below ground level for new roots to actively grow. Aeration also reduces compaction and improves drainage.

- **Over seeding**, usually done in conjunction with aeration, applies many slits in the soil, plants seed in the slits, then covers the seed, all in one pass. Over seeding also produces some aeration. Over seeding helps to maintain a seed base that can outcompete weed species.

- **Mowing**, the City mows at a height of 3- 3½ inches. Mowing at this height reduces stress on the turf and allows the turf to withstand heavy use. Cutting turf at a lower height would assist weed species in out-competing the grass turf.

- **Soil testing** is a vital tool in documenting whether an area needs additional nutrients. Nutrients (fertilizers) play an integral role in the growing of a healthy dense turf and landscaped area. The soil test provides guidance as to the minimum amount of fertilizer needed.

- **Fertilizer** application at proper rates plays a critical role in maintaining a healthy dense turf that can out-compete weed species and thus minimize the use of pesticides. The City of Canandaigua uses fertilizers for root feeding plants such as turf, landscape beds, flower beds, and in some cases, trees and potted plants. The latest research from Cornell has documented that turf density can be directly attributed to nitrogen levels and that nitrogen applications on established turf can be reduced by more than 50%. In addition, Cornell's research has also shown that the natural levels of phosphorus in our area soils are sufficient and thus additional phosphorus is rarely needed to grow turf. Phosphorus is the nutrient of greatest concern to impacting the water quality of Canandaigua Lake. Therefore, the City will follow a policy of not using fertilizers with phosphorus unless a soil or tissue test documents the need.

Pesticide Use Thresholds

On average, the City has applied pesticides to its turf areas every 5 years with a range of 3-8 years based on the park. According to Cornell Turf Management Researchers this is a very low application frequency. As part of this policy the City will strive to maintain and possibly lengthen the times between applications through the implementation of this policy.

Establishing thresholds is setting boundaries or levels of infestations and damage that can be tolerated before pesticides are utilized. The City of Canandaigua utilizes economic and public nuisance thresholds, rather than aesthetic ones, to determine if a pesticide may be used. Weed density in a turf plot is measurable. When dandelion and plantain densities are more than 25% of a turf plot and management practices have failed, then a pesticide application may be used depending on the priority of the turf or landscape. Lower priority areas will have a greater weed density threshold before herbicides are used as long as there is significant turf density.

When an infestation of grubs or other damaging insects begins in an athletic field and is at a density which is damaging the turf, there are two ways to address the situation. One practice would be to allow the damage to run its course over a large area, and then treat with a pesticide and renovate, which would be very expensive. Another practice is to identify the damage early and treat the affected area, thus containing the damage and use of pesticides to a small area. This approach has the dual benefit of being far less expensive in pesticide and renovation costs along with being much less damaging to the environment.

A property's usage, economic value and environmental impact will be utilized in prioritizing when pesticides may be used. Athletic fields or Kershaw Park turf may have a higher priority because the intensity of use makes these areas more susceptible to damage and pest infestation. City managed lands that have a low use would have a lower priority due to the lack of intense use. Long-term plantings such as landscape beds and

tree plantings are very expensive and have a high priority. Annual flowerbeds, while expensive, have very low priority because they are short-term plantings. A bald face hornet nest 40 feet up in a street tree has very low priority, while a nest 10 feet over a sidewalk has the highest level of priority. Impervious areas (areas of high runoff), such as curb lines and paving brick, and areas with high or fast drainage, will not be treated with pesticides. These areas are treated with management practices such as burning or trimming.

The management level of City maintained properties is prioritized based on the intensity of use, economic value and environmental impact from highest to lowest in the table below.

Management Level of City Maintained land	**City Maintained Lands**
Highest	Kershaw Park, Baker athletic fields, Northeast Park athletic fields; Kershaw landscape beds, City Hall landscape beds, Tree plantings
Medium	Sonnenberg and Jefferson Parks, BID medians, annual flowerbeds, City facility properties,
Lowest	City Pier, Atwater meadows, Lagoon Park, 5&20 medians, City Parking lots, City commercial sites (gravely), and other impervious areas

Pesticide Use practices:
The City of Canandaigua has invested time and money in keeping our highly trained staff current in the proper use of pesticides. In addition, the City has made substantial investment in quality application equipment in order to make sure the proper amount of pesticide is being applied. Quality personnel and equipment greatly improves the success and safety of a pesticide application.

If a situation occurs where a pesticide application is needed, the type of pesticide to be used is found in "Cornell Recommends", a yearly and always updated publication. Rates of application on the label are not recommendations, they are NYSDEC regulated law. The Environmental Impact Quotient (EIQ), a method developed by Cornell researchers to measure the environmental impact of pesticides, will be considered to select the best pesticide with the least affect on the environment. The City will always strive to use a pesticide with a low EIQ.

The City applies pesticides in liquid form rather than granular form due to the liquid form's many advantages. Spraying allows for exact metering of an herbicide, allows each pest to be targeted precisely, and is not dependant on precipitation. Granular pesticides do not target the pest, but rely on root uptake to be effective. This means that adequate moisture must be available for the granules to work. In some cases granular pesticides can remain on a field for weeks before the next rain event activates the pesticide. Children and dogs playing on these fields are much more likely to be exposed to pesticides if a granular form is used. Finally, the application of pesticides on turf areas will be done during minimal use times in order to further reduce any potential exposure to pesticides.

Conclusion

The goal of all turf areas is a healthy, dense turf with a healthy root system 4-8 inches deep. This ideal turf acts as one of the best buffers to our watershed. As air pollution blows across and polluted rain and runoff water runs over a thick and healthy turf, it slows and collects these pollutants and it many cases metabolizes them into inert or usable compounds and elements. An important defense of our watershed and all of its users, including terrestrial and aquatic life, is the elimination of runoff. Cornell studies have documented that a healthy dense turf greatly reduces runoff. The goal of this policy is to maintain and possibly reduce the minimal use of pesticides and fertilizers that the City uses while successfully managing our turf and landscaped areas for their multiple uses along with protecting City staff, park users and the environment.

MORATORIUM PURPOSE

The Purpose of this Moratorium is to prohibit the City of Canandaigua from applying pesticides, as set forth above in the *Turf and Landscape Management Policy*, on City park lands for 5 years, so as to allow the City Council time to study the impacts, effects, and possible controls over such activities and to consider adopting alternative turf management policies. The City Council finds that a moratorium of five (5) years duration, coupled with a mechanism for an 'emergency application' procedure, will achieve an appropriate balancing of interests between the public need to safeguard the resources of the City of Canandaigua and the health, safety, and general welfare of its residents.

MORATORIUM TERM

The maximum term of this moratorium and prohibition shall become effective on June 2, 2016 and shall expire on the earlier of (i) that date which is five (5) years after said effective date, or (ii) the effective date of a duly enacted Resolution repealing this Moratorium.

MORATORIUM APPLICATION

This moratorium and prohibition shall apply to all real property located within the City's designated parks (set forth in Code Chapter 519).

MORATORIUM DEFINITION

"Pesticide" shall have the same meaning as set forth in subdivision thirty-five of section 33-0101 of the environmental conservation law, provided however that it shall not include:

(i) the application of anti-microbial pesticides and anti-microbial products as defined by FIFRA in 7 U.S.C. Section 136(mm) and 136-q(h)(2);

(ii) the use of an aerosol product with a directed spray, in containers of eighteen fluid ounces or less, when used to protect individuals from an imminent threat from stinging and biting insects, including venomous spiders, bees, wasps and hornets;

(iii) the use of non-volatile insect or rodent bait in a tamper resistant container;

(iv) the application of a pesticide classified by the United States Environmental Protection Agency as an exempt material under 40 CFR Part 152.25;

(v) the use of boric acid and disodium octaborate tetrahydrate; or

(vi) the use of horticultural soap and oils that do not contain synthetic pesticides or synergists.

MORATORIUM EMERGENCY APPLICATION

No person shall apply pesticide to any City parkland, except that an application of a pesticide may be made in emergency situations that if not addressed would cause a public safety hazard, as determined and permitted by the Director of Public Works, with immediate notification to the City Manager and City Council.

MORATORIUM REPORTING

To allow the City Council to properly study the impacts, effects, and possible controls over the applications of pesticides on City park lands and to consider adopting alternative turf management policies, the Director of Public Works shall provide a report every six (6) months during the Moratorium to the City Manager for review and discussion by the Environmental Committee. Such report, at a minimum, shall contain a summary of:

1) the condition of the park lands, in particular the playing fields; and
2) the alternative measures that have been implemented to attempt to maintain healthy turf and landscape; and
3) the actual cost of such alternative applications, as well as the man-hours needed to implement such measure; and
4) such other information that is necessary for the City Council to make an informed decision.