

# Integrated Pest Management Plan

Jessica Neal – General Foreman, Parks Department

March 7, 2019

Updated to include contractor data

# Integrated Pest Management Plan

- A plan that is used to manage pests
- Goals
  - Include a variety of methods that are designed to minimize the use of pesticides
  - Minimize impacts to the environment and health
  - Maintain Fiscal Responsibility
  - Promote Successful Turf Management

Recently, in 2019, New York State Senator Catharine Young (R) and Assemblywoman Aileen Gunther (D) have introduced legislation (S920/A3632) defining Integrated Pest Management as:

*“Integrated Pest Management means a systematic approach to managing pests that utilizes a diversity of management options to minimize health, environmental and economic risks and impacts. These options may include biological, cultural, physical, and chemical tools to prevent pest infestations or reduce them to acceptable levels.”*

This is the same definition recognized by:

Food Quality Protection Act of 1996  
The National Integrated Pest Management (IPM) Network.  
Empire State Council of Agricultural Organizations  
Federal Code 136r-1. Integrated Pest Management.

# Town of Pittsford's Integrated Pest Management Plan

- Supervisor Smith tasked us to reach out to the prominent authorities on IPM to review our current practices, with specific attention to alternatives to chemical pesticides.

## Walt Nelson

- Horticultural Program Leader at the Cornell University Cooperative Extension of Monroe County
  - Provides educational programs and consultation to the sports turf, lawnscape, ornamental horticulture, greenhouse, and Christmas tree business owners and managers
- 40 years of experience of program leaderships at Cornell Cooperative Extension
- He also provides guidance for the community horticulture program in Monroe County
- He received a BS in Horticulture from Penn State University, and his MBA from the Simon School of Business at the University of Rochester

## Lynn Braband

- Employed by the New York State IPM program run by Cornell University
  - Provides educational programs and consultation to New York State schools and municipalities in the implementation of IPM
- He has an M.S. in Wildlife Biology from Iowa State University, and a B.S. in Fisheries and Wildlife Biology also from Iowa State
- He has co-authored books on IPM, and has taught wildlife classes at several local colleges including RIT and Nazareth

# Town of Pittsford's Integrated Pest Management Plan

- **Focuses on Athletic Fields**
  - Protecting Pittsford taxpayers' recent \$7 million investment in our fields
  - "Duty of Care" – Maintain our athletic fields at acceptable standards with player safety in mind
    - Prevent Injuries and Legal Challenges
    - Meet Scholastic and Community Expectations
    - Promote Healthy Turf capable of withstanding daily use
  - Structural Integrity and Safety of the Fields is Priority, not Aesthetics
  - Enhance our Cultural Practices to Minimize Applications
- **Focuses on Minimizing Applications in Areas Other than Athletic Fields by Improving Cultural and Physical Practices**
  - Stone Dust Trails and Landscape Beds
  - Pavers
  - Formal Recreation Spaces

Town Land	
Open Space	1130.5 Acres
Active Parks	237.2 Acres
Athletic Fields	21 Acres
Town Facilities	16.1 Acres
Cemeteries	2.3 Acres
Maintained Park Districts	28 Acres
Trails and Accessways	37.3 Miles

# Athletic Field Safety

- **University of Rochester Sports Medicine – *“How can soccer injuries be prevented? Be aware of poor field conditions that can increase injury rates”***
- **Penn State University – *“study reported that a reduction of up to 20.9% in injuries could have been prevented or perhaps less severe by more favorable field conditions”***
- **National Athletic Trainers Association – *“Muscle strains and tears, ligament sprains, broken bones, and concussions are all injuries that may result from poor field conditions. It is important to be aware of the field conditions prior to the start of a practice or game and to inform coaches when poor field conditions may increase the risk of their athletes being injured.”***
- **Cornell University Turfgrass Program – *“Key to safety is to have adequate turf cover which provides athlete foot traction, surface friction and a surface that can absorb athlete shock forces. The sports field should provide a level of footing that benefits the player's actions without causing excessive stress to joints or ligaments.”***

# Town of Pittsford's Integrated Pest Management Plan

- Cultural Practices as Recommended by Cornell's IPM Program
  - Overseed, a lot!
  - Irrigate at least the High Priority Fields
  - Keep Field use at a Reasonable Level
  - Maintain Good Field Fertility Levels
  - Mow at as High of a Height as the Grass and Sport will Allow



# 2018 Applications By Town Staff

- All applications were applied by NYS – Department of Environmental Conservation Certified Applicators or Technicians
- All Applications adhered to New York laws (postings and reporting)
- All Applications were made in accordance to New York State label requirements
- Timing, Weather, and all Safety Precautions were followed

<u>EPA Reg. #</u>	<u>Product</u>	<u>Quantity</u>	<u>Location</u>	<u>Pest</u>
228-565	Candor	18 FL oz.	Drainage Easement on Oak Manor and Kirklees Road	Residents Request to Control Fig Buttercup
62719-137-961	Team 2G	20 lbs	Windscape Park District	Resdients Request to Control Crabgrass
524-475	RoundUp Pro	62.5 FL oz.	Kings Bend Park	Control Crabgrass and other Weeds in Landscape Beds
524-475	RoundUp Pro	10.5 FL oz.	Chatham Woods Trail	Resident Request to control weeds adjacent to Home
524-475	RoundUp Pro	15 FL oz.	Port of Pittsford Park	Control Crabgrass and other Weeds in Landscape Beds
524-475	RoundUp Pro	12 FL oz.	Kings Bend Park	Control Weeds in Paver Walkways
524-475	RoundUp Pro	4 FL oz.	Copper Beech Park	Control Weeds in Paver Walkways
524-475	RoundUp Pro	14 FL oz.	Farm View Park	Control Weeds along Fenceline
2217-774	Brushmaster	7.5 FL oz.	Thornell Farm Park	School District Request to Control Poison Ivy
432-1349-961	Lebanon Pro Fertilizer with Merit 0.2%	3000 lbs*	Athletic Fields	Grubs
		(6 lbs of Active Ingredient)		

\*the active ingredient in Merit, imidacloprid, is only 0.2% of the total product. For every 1,000 lbs applied, there is only 2 lbs of active ingredient. This is about a half pound per soccer field.

# 2018 Applications By Contractor: Town and Country Enterprises

- All applications were applied by NYS – Department of Environmental Conservation Certified Applicators or Technicians
- All Applications adhered to New York laws (postings and reporting)
- All Applications were made in accordance to New York State label requirements
- Timing, Weather, and all Safety Precautions were followed

<u>EPA Reg. #</u>	<u>Product</u>	<u>Quantity</u>	<u>Location</u>	<u>Pest</u>
34704-890	Kleen Up Pro (Same active ingredient as RoundUp Pro)	17 FL oz.	Autumn Woods Park District	Weed infestation in landscape beds
34704-890	Kleen Up Pro	13 FL oz.	Coddington Park District	Weed infestation in landscape beds
34704-890	Kleen Up Pro	4.5 FL oz.	Delancey Court Park District	Weed infestation in landscape beds
34704-890	Kleen Up Pro	6.5 FL oz.	Greythorne Park District	Weed infestation in landscape beds
34704-890	Kleen Up Pro	4 FL oz.	Harvest Glen Park District	Weed infestation in landscape beds
34704-890	Kleen Up Pro	3.5 FL oz.	Hedge Wood Crest Wood Park District	Weed infestation in landscape beds
34704-890	Kleen Up Pro	18.5 FL oz.	Kensington Park District	Weed infestation in landscape beds
34704-890	Kleen Up Pro	14.5 FL oz.	Kolaneka/Mitchell Park District	Weed infestation in landscape beds
34704-890	Kleen Up Pro	4.5 FL oz.	Merry Creek Crossing Park District	Weed infestation in landscape beds
34704-890	Kleen Up Pro	15.5 FL oz.	Northstone Park District	Weed infestation in landscape beds
34704-890	Kleen Up Pro	6.7 FL oz.	Rollins Crossing Park District	Weed infestation in landscape beds
34704-890	Kleen Up Pro	3 FL oz.	Summer Circle Park District	Weed infestation in landscape beds
34704-890	Kleen Up Pro	3.5 FL oz.	Wexford Park District	Weed infestation in landscape beds
34704-890	Kleen Up Pro	3.5 FL oz.	Whitley Court Park District	Weed infestation in landscape beds
34704-890	Kleen Up Pro	4 FL oz.	Windscape Park District	Weed infestation in landscape beds
34704-890	Kleen Up Pro	7.5 FL. Oz	Wren Field Park District	Weed infestation in landscape beds



# TOTAL

For all 1,334 acres of land under Town care,  
Town Staff *and the Town's Contractor, together,*  
have used less than 1 bottle of RoundUp Pro,  
and its equivalent, Kleen Up Pro per year  
(1.9 gallons)



# Pests – Broadleaf Weeds



*Plantain*



*Ground Ivy*



*Clover*

## Concerns

- Safety – weeds offer less traction for Athlete's footing, as well as act as trip hazards as they clump together potentially causing injury
- Overuse and wear on Athletic Fields provides voids in the grass that encourage weeds
- Should the weeds exceed an acceptable threshold, they will compete with the desirable grasses for moisture, light, and nutrients

# Pests – Broadleaf Weeds



*Plantain*



*Ground Ivy*



*Clover*

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## Current IPM Practice

Lesco 3-Way

Kills weeds while saving grass.  
Applied as needed every 3 - 4 years

\$420 to treat all Athletic Fields  
every 3 - 4 years

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## Pesticide Free Option

Overseeding

Constant seeding at 2-3 lbs / 1,000 square feet to crowd out weeds. Needs to be completed 7 times per year with fields taken off-line.

\$29,400 in grass seed annually  
Overseeder and Aerator - \$21,000  
Additional Staff Time

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# Pests – Broadleaf Weeds



*Plantain*



*Ground Ivy*



*Clover*

- Overseeding can be partially effective
- Would require at least 1 additional full-time employee (\$53,800 salary & benefits per year)
- Purchase of additional equipment required (\$21,000)
- Fields would need to be taken off-line during bi-weekly applications, resulting in significant scheduling conflicts



**Typical Pittsford ½ Acre Lots**  
**Contracted Lawn Care Service**  
**Treatment Plan**

**Homeowners Apply**  
**Each Year:**

Early Spring

**Broadleaf Weed Control**

Mid Spring

**Broadleaf Weed Control**

**Crabgrass Pre-Emergent**

Early Summer

**Grub Control**

**Broadleaf Weed Control**

**Supplemental Crabgrass**

**Nutsedge Control**

Mid Summer

**Broadleaf Weed Control**

**Supplemental Crabgrass**

**Nutsedge Control**

**Surface Insects**

Late Summer

**Broadleaf Weed Control**

Mid Fall

**Broadleaf Weed Control**

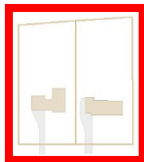
*There are more than*

**9500**

*homes in the Town of Pittsford*

*These 2 homes apply as much  
herbicide in 3 years as . . . .*

**2 Half Acre  
Residential  
Homes**



***The Town of Pittsford applies to all 21 acres of  
Athletic Fields over the same period of time***

**Thornell  
Farm  
Park**

**Great  
Embankment  
Park**

**Hopkins  
Park**

**Farm View  
Park**



## Summary

Every 3 years:

- The Town applies as much herbicide to all Athletic Fields as
- as
- Just 2 average Pittsford homes with a lawn service apply over the same period
- *There are 9,500 homes in Pittsford*



2 - ½ Acre Lots



Total Acreage of all Athletic Fields

# Pests – Grubs



*Grub*



*Skunk*



*Grub and Skunk Damage*

## Concerns

- **Safety** - Grubs feed on the roots of grass and can eliminate the entire root structure causing an athlete to have no footing, potentially causing injury
- Grubs encourage skunks to dig overnight, further compromising the turf
- Repairs are costly and force taking the Athletic Field off-line for a long duration



*Results after No Treatment*



# Pests – Grubs



*Grub*



*Skunk*



*Grub and Skunk Damage*

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## Current IPM Practice

Merit 0.2%

Grub Pre-Emergent applied late summer once per year  
1/2 lb active ingredient per field (250 lbs. total product per field)

\$1,132 to treat all Athletic Fields

Nematodes



## Pesticide Free Option

Microscopic parasitic roundworms that eat the grubs from the inside out. 1,000,000,000 per acre are required. Results are inconsistent.

\$11,800 to treat all Athletic Fields  
Applications must be made during hours of darkness

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# Pests – Grubs



*Grub*



*Skunk*



*Grub and Skunk Damage*

- Dr. Frank Rossi of Cornell University on the efficacy of Nematodes: *“results are inconsistent and failures are common.”*
- Nematodes would need to be applied during the hours of darkness
- Cost of Nematodes is more than 10 times the cost of Merit
- Merit has proven to be 100% effective

# Pests – Crabgrass



*Crabgrass*



*Crabgrass Infestation*

- The Town of Pittsford has not had to treat for Crabgrass in the past
- With last year's wet spring and hot dry summer, 2018 was considered one of the worst crabgrass infestations in the last 5 years
- Pesticide free option would require one more additional overseeding in August, again requiring closure of the fields

# Pests – Crabgrass



*Crabgrass*



*Crabgrass Infestation*

## Concerns

- **Safety – weeds offer uneven footing, as well as act as trip hazards as they clump together potentially causing injury.**
- **Overuse and wear on Athletic Fields provides voids in the grass that encourages crabgrass**
- **Should crabgrass exceed an acceptable threshold, it will compete with the desirable grasses for moisture, light, and nutrients**
- **Seed Bank persists in the soil for up to 7 years**

# Pests – Crabgrass



*Crabgrass*



*Crabgrass Infestation*

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## Recommended IPM Practice, If Necessary

**Dimension 0.10%**

**Prevents crabgrass from germinating.  
Historically there has not been the need but must be prepared.**

**\$530 to treat Great Embankment  
and Thornell Farm Parks if  
necessary**

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## Pesticide Free Option

**Overseeding**

**Overseeding at 4-6 lbs in early August attempts to crowd out  
crabgrass**

**Would bring cost of grass seed for  
annual overseeding to over  
\$31,200**

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# Facts about RoundUp

- The Town of Pittsford does not use RoundUp on its Athletic Fields
- Each year, in total, the Town uses less than 1 gallon of RoundUp in maintaining all 1,334 acres of land under its care
- The U.N.'s World Health Organization (WHO) has repudiated a claim by its subsidiary the IARC calling RoundUp “probably carcinogenic”
- Regulatory bodies around the world agreed with the WHO's repudiation, including the European Food Safety Authority, the Canadian Pest Management Regulatory Agency, the German Federal Institute for Risk Management, and the Australian Pesticides and Veterinary Medicines Authority
- The U.S National Cancer Institute and the EPA also refute this claim

# Facts about RoundUp

- Scientists and researchers have refuted the IARC's claim and criticized its unscientific methods and conclusions in this report
- Reuters Investigates – *“IARC's assessment that glyphosate is a probable human carcinogen is an outlier. In the 40 or so years since the weedkiller first came to the market, glyphosate has been repeatedly scrutinised and judged safe to use.”*
- Reuters Investigates – *“A year after IARC issued its evaluation, a joint United Nations and World Health Organization panel reviewed the potential for glyphosate in food to cause cancer in people. It concluded the weedkiller was ‘unlikely to pose a carcinogenic risk to humans.’”*

# Facts about RoundUp

- National Public Radio's Dan Charles reported "*... Regulatory bodies that are actually supposed to look at real-world risks from exposure – they have looked at the same studies . . . and they've come to opposite conclusion – that it probably does not cause cancer.*" (Source: Weekend Edition Sunday, August 12, 2018)
- Referring to study of 50,000 farm workers, he reported "*In that study, the workers who were exposed to glyphosate or RoundUp have not gotten cancer at any higher rates.*" (Source: Weekend Edition Sunday, August 12, 2018)
- The Town of Pittsford does not use RoundUp on its Athletic Fields
- Each year, for a total of 1,334 acres of land maintained by our Parks Department, the Town uses less than 1 gallon of RoundUp




# Organic Pesticide Myths

Organic Pesticides are safer than Synthetic FALSE!

**SUPPLEMENTAL LABELING**

READ THE ENTIRE LABEL FOR ROUNDUP PROMAX™ HERBICIDE BEFORE PROCEEDING WITH THE USE DIRECTIONS CONTAINED IN THIS SUPPLEMENTAL LABELING.

When using Roundup PROMAX herbicide as permitted according to this supplemental labeling, read and follow all applicable directions, restrictions, and precautions on the label booklet provided with the pesticide container and on the supplemental labeling. This supplemental labeling must be in the possession of the user at the time of pesticide application.



LIMITATIONS ON AERIAL APPLICATION IN CALIFORNIA ONLY, INCLUDING FRESNO COUNTY, CALIFORNIA

EPA Reg. No. 528-575 Roundup PROMAX and Roundup PROMAX 3-Design are trademarks of Monsanto Technology LLC.

Keep out of reach of children

**CAUTION!**

In case of an emergency involving this product, Call CalSOS, day or night, 311-684-8000.

**DIRECTIONS FOR USE**

It is a violation of federal law to use this product in any manner inconsistent with its labeling.

This labeling is part of the pesticide of the use of the Roundup PROMAX herbicide application.

AVOID CONTACT OF HERBICIDE WITH HUMANS, ANIMALS, OR OTHER DOMESTIC ANIMALS. AVOID CONTACT OF HERBICIDE WITH INHABITED AREAS. AVOID CONTACT OF HERBICIDE WITH FISH, BIRDS, BEES, AND OTHER POLLINATING INSECTS. AVOID CONTACT OF HERBICIDE WITH OTHER DOMESTIC ANIMALS. AVOID CONTACT OF HERBICIDE WITH OTHER DOMESTIC ANIMALS. AVOID CONTACT OF HERBICIDE WITH OTHER DOMESTIC ANIMALS.

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**Fast Acting AVENGER WEED KILLER CONCENTRATE**



Non-Selective: Controls most weeds, grasses & broadleaves

OMRI FOR ORGANIC GARDENING

Herbicide

KEEP OUT OF REACH OF CHILDREN CAUTION

Net Contents: 32 FL OZ (946 mL)

**Directions for Use:**

Apply to the weeds and grasses to be controlled. Do not apply to crops, ornamentals, or other desirable plants. Do not apply to lawns, lawns, or other areas where the product will be applied to.

**CONCENTRATE AVENGER WEED KILLER**

**PRECAUTIONARY STATEMENTS-HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**Hazards to Humans:**

Irritant: Causes eye irritation. Causes skin irritation. Causes respiratory irritation. Causes throat irritation. Causes allergic reactions in some individuals.

**Hazards to Domestic Animals:**

Irritant: Causes eye irritation. Causes skin irritation. Causes respiratory irritation. Causes throat irritation. Causes allergic reactions in some individuals.

**Environmental Hazards:**

None known.


**Physical and Chemical Hazards:**

None known.

**Use:**

Apply to the weeds and grasses to be controlled. Do not apply to crops, ornamentals, or other desirable plants. Do not apply to lawns, lawns, or other areas where the product will be applied to.

**Vinagreen**



A Horticultural Vinegar Biopesticide - for Non-Selective Control of Herbaceous Broadleaf Weeds and Weed Grasses which Surround Food crops, Non-food crops and Non-production Agricultural, Farmstead, Right-of-Way, and Institutional Land Sites

**For Organic Production**

Active Ingredient:	Acetic Acid	20.0%
Other Ingredients:		80.0%
Total:		100.0%

Equivalent to 200 grain vinegar by dilution

**KEEP OUT OF REACH OF CHILDREN DANGER - PELIGRO**

Si usted no entiende, busque a alguien para que le lo explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

**PRECAUTIONARY STATEMENTS**  
Hazards to Humans and Domestic Animals  
**DANGER**

Corrosive - causes irreversible eye damage. Wear goggles or face shield when handling. Harmful if absorbed through skin. Harmful if swallowed. Do not get in eyes, on skin, or on clothing. In case of contact, immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists. Wash thoroughly with soap and water after handling. Use personal protection equipment when handling and/or applying.

**PERSONAL PROTECTION EQUIPMENT (PPE):**  
Applicators and other handlers must wear appropriate protective eyewear, such as face shield or goggles and face mask with MSHA/NIOSH approval number prefix such as N95, R-95, or P-95; long sleeved shirt and long pants, waterproof gloves and shoes plus socks.

**USER SAFETY REQUIREMENTS:**  
Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions exist for PPE, use detergent and hot water. Keep and wash PPE separately from other laundry.

**USER SAFETY RECOMMENDATIONS:** Users should:  
o Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.  
o Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.  
o Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**ENVIRONMENTAL HAZARDS:**  
o This pesticide is toxic to birds exposed to spray drift, direct treatment or residues on crops or weeds. Do not apply this product or allow to drift to crops or weeds if birds are actively visiting the treatment area.  
o This pesticide is toxic to fish and aquatic invertebrates.  
o For terrestrial use only. Do not apply directly to water.

**Manufactured by: Fleetsman's Vinegar Company, Inc.**  
12664 Haldemereck Way, Ste. A, Corcoran, CA 90703, USA (800) 443-1067

**NON-REFUNDABLE IRUM - DO NOT LAY DOWN OR ROLL IRUM**

55 US GALLONS • 208 LITERS  
NET WEIGHT 470 LBS / 215 KG

EPA Registration No. 85288-1  
PRODUCT# 0165556016302 **LOT #**

EPA Establishment No: **85208 - CA - 001**

Product

RoundUp ProMax (Synthetic)

Avenger Weed Killer (Organic)

Vinagreen (Organic)

Active Ingredient

Glyphosate

Citrus Oil

Acetic Acid / Vinegar

Signal Word

Caution

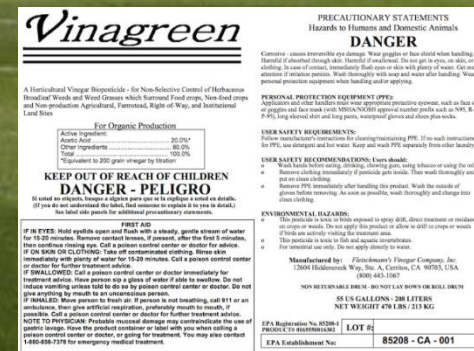
Caution

Danger

# Organic Pesticide Myths

**Organic Pesticides  
are safer than  
Synthetic**

**FALSE!**



**Product**

**RoundUp ProMax  
(Synthetic)**

**Avenger Weed Killer  
(Organic)**

**Vinagreen  
(Organic)**

**Toxicity Warnings**

**Eye and Skin Irritation  
Avoid Breathing Vapor  
Do Not Apply Directly  
to Water**

**Eye and Skin Irritation  
Avoid Breathing Vapor  
Do Not Apply Directly to  
Water**

**Corrosive, Irreversible Eye  
Damage, Skin Irritation, Toxic  
to Aquatic Invertebrates,  
Don't Apply Directly to Water**

**Effectiveness**

**Systemic – kills entire  
plant with one  
application**

**Only temporarily  
effective – kills leaves,  
not roots; plant comes  
back, must re-apply**

**Only temporarily effective –  
kills leaves, not roots; plant  
comes back, must re-apply**

# Summary:

## Recommended Integrated Pest Management Plan

The Parks Department's Integrated Pest Management Proposal is looking to minimize pesticide use by the Town, as well as remain fiscally responsible. We can follow the true spirit of IPM and use the following options:

- Limit Chemical Grub Control to Great Embankment Park
  - Treat Crabgrass Only if and as Needed
  - Continue to Aerate, Irrigate and Overseed
  - Purchase Ventrac Ball Field Renovator attachment, which has proven over the last two years to be an effective alternative to RoundUp use on infield clay
  - Confine the Use of RoundUp to Mulch Beds, and Pavers.
- 
- RoundUp has never been applied to Athletic Field turf grass. This practice will continue.

# Summary

- **Elimination of Chemical Pesticides Would Affect Taxpayers as Follows:**
  - **Increase the Parks Maintenance Budget by 80% or the entire Park's Department Operating Budget by 13%**
  - **Park District Budget would increase by 18%, cost automatically passed along to every resident in the Park District**
- **Misleading information about the Town's use of Pesticides has caused confusion**
- **The Parks Department's Integrated Pest Management Plan is based on thorough, expert research and serves as a reliable and principled guide for the Town**