To: Michael K. McGovern, Town Manager

From: Robert C. Malley, Director of Public Works

Date: May 2, 2016

Re: Update on Progress of Town Council Goal:

 – “Consider banning the use of all pesticides on town-owned property”

 One of the 2016 Town Council goals under the “Sustainability” category was to “Consider banning the use of all pesticides on town-owned property”. The Town Council lead on this particular goal is Sara Lennon and I was assigned to be the staff lead, since grounds maintenance on town-owned property falls under my jurisdiction.

 On Thursday, April 21st, I met with Councilor Lennon to review her expectations and to develop a path forward. It was a very productive meeting for both of us as we discussed our past and current grounds maintenance practices. We also reviewed the changes that I have proposed in the FY 2017 budget submittal, which calls for the expanded use of organics in our grounds maintenance program.

 This issue is getting more attention in southern Maine, as many communities are considering some type of use ban on both public and private property. In order to provide some historical perspective on the use of pesticides on town-owned property, I thought it would be helpful to explain our program, both past and present and then outline what I feel is the best path to take on this issue.

**Historical Use of Pesticides on Town-Owned Property**

 By definition, a pesticide is “a substance used for destroying insects or other organisms harmful to cultivated plants or to animals.” An herbicide “is a pesticide used to kill unwanted plants.” Pesticides and herbicides have been used on town-owned property for the 35+ years I have worked for the community. The athletic fields have been the primary areas being treated, but treatments have also been done on municipal facilities such as the Public Safety Bldg., the Town Hall, the Public Works Facility and isolated areas in Fort Williams Park. All of the applications done during my tenure have been done in accordance with State of Maine regulations. The treatments have been done by a combination of private contractors and town employees, all of whom were certified by the State of Maine Bureau of Pesticide Control. They have also been done in accordance with the Town’s Integrated Pest Management Plan (IPM), which is overseen by Greg Marles, who is the Town’s IPM Coordinator. The plan requires specific application and notification protocols, which have been strictly adhered to.

 Our program has been undertaken using a cautious approach and done to control pests and broadleaf weeds, when needed. We have treated entire fields and we have also done “spot” treatments, where just a specific area is identified as needing treatment. Pests can come in the form of insects, such as Armyworms and Japanese beetles, or “grubs” as they are commonly called. “Grubs” can attract skunks and crows which will literally destroy the turf in search of them. Broadleaf weeds such as dandelions, chickweed and plantain spread rapidly and will choke out turf grasses, which are needed to sustain an athletic field through heavy use. We have also had problems in the past on two of our fields with Poa Annua, which is an annual bluegrass but is considered a grassy weed. If not controlled, it can compete with perennial turf grass species for water, nutrients and sunlight.

**Current Pest & Broadleaf Control Program**

 At the present time, we are spraying the dirt portions of our baseball and little league infields with a chemical (glysophate) and preemergent to control weeds. This is usually done after school is closed for the summer (late June). Infield areas are quite susceptible to weed infestation, especially when the field experiences limited use. We are also treating our athletic fields and selective municipal areas with a “weed and feed” type of fertilizer. This is done once a year, usually during the second week in August when the Community Services Summer Camp is over. We generally use a granulated product, but we have had to use a liquid product up on the Middle School Baseball field to achieve quicker results. It was mentioned above that we have had isolated problems with the spread of Poa Annua. If needed, those treatments are done in May, in accordance with the IPM plan. “Grubs” continue to be a concern and those are treated on an as needed basis.

 Recognizing many years ago that there was a heightened awareness of the use of pesticides and herbicides, we selected one of our fields as a test case for the use of organic-based products. Since the Summer of 2011, we have been utilizing the services of a private contractor to apply organic-based nutrients and weed control on the Upper Gull Crest Field. That field was chosen so we could compare the results with the Lower Gull Crest field located easterly of the upper field. It has taken on a pale green appearance during the growing season compared to the lower field, but it appears to be reasonably healthy, other than a presence of clover which has started to spread. We have also treated the lawn area of the Portland Head Light, which receives 3 treatments/year of organic-based products.

**Proposed Changes to the Current Pest & Broadleaf Weed Control Program**

 In the FY 2017 budget submittal, I proposed expanding our organic-based nutrient and weed control program. Both Councilor Lennon and I feel it is a logical approach to modifying our current program. Here is the passage from the budget document with a minor edit:

“For FY 2017, it is proposed to expand our organic program to include two more of our athletic fields; the Lower Gullcrest Field and the Fort Williams Park Multi-Purpose Field. It is proposed to expand the organic program incrementally as it is more expensive and requires more staff time to aerate, which is a “piercing” of the soil to reduce compaction and allow nutrients to be absorbed. We started to utilize organic nutrients and weed control products on the Upper Gullcrest Field six years ago. The turf grass on this field has held up pretty well, but it does not get the intensive use that those on the school campus receive. It is taking on a pale green appearance and we have seen an encroachment of clover over the past year. Clover is not as resistant to sustained athletic activity, but it does help the nitrogen level in the soil. If approved, these fields would join the Upper Gullcrest Field and the grounds of the Portland Head Light (PHL) in being treated with organic products.

There are certain insects that do not always respond to organic products currently on the market. These would be Japanese Beetles, or “grubs” as they are commonly referred known as. We have had issues with grubs in the past and they can do a great deal of damage to an athletic field. The beetles feed on the root structure of turf grass, which essentially kills it. This action then attracts skunks and crows, which will then feed on the grubs, doing further damage to the turf. The disturbed areas are treated with a synthetic chemical application, when the grubs are small and actively feeding near the surface of the turf. Depending on the level of infestation, a synthetic insecticide will have to be used to eradicate them to avoid permanent damage to the field.

It is also proposed to eliminate the spraying of a liquid herbicide on the landscape beds at the PHL and the dirt areas of our baseball, softball and Little League fields. For years we have sprayed a product similar to “Roundup” once a year to keep weeds from flourishing on the fields. Though the desired results may not be achieved, it is proposed to try an organic product along with a more aggressive grooming program in an attempt to keep the weeds under control. The field groomer approved in the FY 2016 budget should help with this endeavor.

It’s important to note that the transition to an organic program is not as simple as using an organic product in place of a synthetic one. Even some organic products, such as vinegar are considered “pesticides” if used in a concentrated manner. An organic program requires more cultural practices, such as aerating and grooming the infields. Aerating a field reduces compaction and stimulates root enhancement, but at the same time it is quite time consuming and must be done 3-4 times per year to be effective. The cost to initiate an organic turf management program is approximately 30% more than a conventional program, which does not include the additional staff time needed to aerate the turf areas more frequently and to increase the frequency of infield grooming.”

**Conclusion and Looking Forward to the Future**

 In my opinion, the timing is right to expand our organic program. Organic-based products are continuing to evolve and are becoming a more affordable, though they are still more expensive than their synthetic counterparts. They are becoming easier to apply and are gaining more acceptance in the industry. Though the weed killers are referred to as “organic” pesticides, they still must be applied by a licensed applicator if used on publicly-owned property. The new product we will be using on the infield areas is called “Avenger” Weed Killer, and it is certified by the OMRI (Organic Materials Review Institute).

 The decision to expand our organic-based nutrient program does not come without challenges. In order for an organic program to work you have to start with a healthy field. This means the weeds have to be under control and the soil has to have the proper nutrient level to start with. Our fields are in reasonably good condition, despite the fact than some of them are overused and do not get adequately rested in the course of a year. They have been fertilized regularly (3x/year) and we have been trying to increase the “PH” balances by applying lime to them, based on soil samples taken annually. It is a slow process and it can take years to get a field to the proper level. The healthier the soil, the better the turf grasses will sustain themselves. We also need to spend more staff time (or contract out) aerating the soil to reduce compaction, which is the enemy of every athletic field. Finally, there is the higher cost to apply the treatments on what will now be three fields, which is currently being done by a private contractor.

 There are no guarantees that this proposed approach will work and/or be as effective as using traditional synthetic products. We have already had to deal with a small infestation of “grubs” on one of our Little League Fields this Spring, which had to be treated with a synthetic pesticide product. The effectiveness of the “Avenger” product is unknown and may require multiple applications (and cost), versus the single treatment required in the past. Finally, there are the expectations of our citizens, who might notice a change in the appearance of some of the fields if they do not respond as effectively to the organic treatments. They may not be as “green” as the fairways on their favorite golf course nor match the colors as seen on their new flat screen TV.

 Our choices? Stay with a traditional program or change the way we have been doing things. I feel we owe it to the citizens of the community to expand the program in order to adequately see the results, rather than say it won’t work without trying.