

4.



PO Box 1749  
Halifax, Nova Scotia  
B3J 3A5 Canada

**Halifax Regional Council**  
**October 12, 2004**

**TO:** Mayor Kelly and Members of Halifax Regional Council

**SUBMITTED BY:**

A handwritten signature in black ink, appearing to read "Brad Anguish", written over a horizontal line.

Brad Anguish, P.Eng., Director, Environmental Management Services

**DATE:** October 6, 2004

**SUBJECT:** Soil Depth/Turf

### INFORMATION REPORT

#### ORIGIN

At the April 13, 2004, meeting of Regional Council it was moved by Councillor Smith, seconded by Councillor Sarto, that Council request a staff report regarding possible amendments to the appropriate municipal By-Law relating to a requirement to ensure that foundations for turf in new developments have a minimum depth of topsoil and the soil have a certain mixture or level of compost added, and that compost in this instance not include bio-solids. Motion put and passed unanimously.

## **BACKGROUND**

### **Issue**

This matter arose from concerns seen by members of Council at some new home construction sites where new turf was being placed on gravel and/ or very little good topsoil resulting in pest and other environmental problems for the homeowner soon thereafter.

Council requested that staff investigate various requirements, and/or policies that HRM could facilitate to help ensure proper and sufficient soils are used in these new developments at the time of construction.

An inter-disciplinary staff meeting concluded that a more holistic approach that included both internal and external stakeholders would be the best approach through community/ industry partnerships.

### **Approach to Issue**

The key issue centres around sustainable landscape maintenance practices, therefore the Environmental Management Services (EMS) department has taken the lead with assistance from staff of Planning and Development and from Regional Planning.

EMS is liaising with external stakeholders to help determine immediate and longer term solutions and Regional Planning will help ensure a direct link to the bigger picture of environmental sustainability (i.e. water/ air/ land/ community) through the Regional Planning process.

Planning and Development, being the administrative lead for the existing Lot Grading/Grade Alteration By-Laws, will look at possible topsoil clauses as these By-Laws are reviewed. These are probably the most appropriate By-Laws for future legislative consideration for topsoil related clauses.

## **DISCUSSION**

### **Link to Corporate Priorities and Direction**

“Healthy, Sustainable Vibrant Community” represents one of the four cornerstone corporate themes.

Environmental sustainability is an integral piece of this theme and includes a diverse range of air, land, water and community components. Sustainable landscape practices which includes such things as proper and sufficient soils supports this direction and subsequently is a direct link to the corporate priorities.

---

## **Importance of Topsoil (Examples)**

### **1. Growing Medium**

Soil provides the growing medium for plants, trees and turf. If it is not of optimal depth and composition, the health of the landscape will be affected. Healthy soils are biologically active, deep enough to provide nutrients and moisture to plants, and loose enough to allow a good supply of air space. Healthy soils and plants are the best defence against diseases and pests.

### **2. Water Quantity**

Adequate topsoil helps enhance retention of stormwater flows, reducing peak run-off somewhat, and thus reducing impacts of rapid stormwater runoff on receiving streams and lakes. This can help reduce downstream erosion. It is important though to ensure that steps are taken during placement of the topsoil initially to avoid erosion of the topsoil from the new lots before it has stabilized.

To the extent that rainwater is attenuated, this would promote natural groundwater recharge.

### **3. Water Quality**

Adequate topsoil also provides some buffering and filtering capacity which helps retain contaminants and sediments, and absorbs nutrients, reducing downstream impacts.

### **4. Water Conservation**

Adequate and proper soils have a greater buffering capacity and provide plants and turf with a much greater capacity to withstand weather extremes (i.e. droughts, cold winters, etc.). Also, when used in tandem with sustainable landscape maintenance practices (i.e. higher mowing heights, aeration, diversified planting, etc.) can greatly reduce the need for additional water, thus aid in water conservation.

### **5. General Aesthetics - Use**

Healthy soils lead to healthy plants which help provide for attractive, useable landscape spaces.

### **6. Other Benefits**

Healthy and sufficient soils provide a number of other benefits such as food and habitat for a number of animals and other living creatures.

---

### **Strategies and Actions to Move Forward**

In the Discussion section, the direct link to the corporate priorities and the importance of soil has been presented.

Staff believe a holistic approach that involves community and industry stewardship will provide the greatest benefit overall.

Staff envisage three steps:

#### **1. Soils Project with Landscape Nova Scotia (copy attached)**

This partnership opportunity involving a number of key partners and stakeholders will provide much needed education and awareness on the importance of topsoil and establish a new paradigm that addresses sustainable long term solutions.

Time Frame - Winter 2004 - 05

#### **2. Link to Regional Planning**

It is expected that the Regional Plan will provide policy support for erosion and vegetative cover provisions in development agreements.

Time Frame - Winter 2004 - Spring 2005

#### **3. Future Legislative Opportunities**

Planning and Development staff will review the role of development agreements for regulating top soil and vegetative cover in conjunction with the existing Lot Grading/ Lot Alteration By-Laws as these By-Laws are reviewed and harmonized. In addition, At that time we should have a clearer indication of the need for legislation and enforcement based upon feedback from the education and awareness efforts.

Time Frame - Spring - Summer 2005

### **BUDGET IMPLICATIONS**

The strategies and actions proposed are within the various operating budgets involved.

---

**FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN**

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

**ALTERNATIVES**

The strategies and action items outlined earlier in this Report is the recommended alternative.

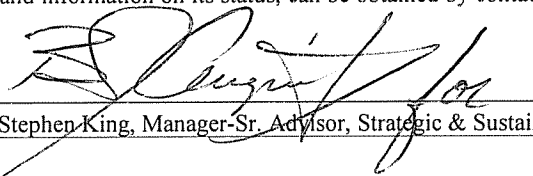
An alternative would be to leave the issue as is, however this would continue to exacerbate the situation, therefore is not recommended.

**ATTACHMENTS**

Soils Partnership Proposal - Landscape Nova Scotia

Additional copies of this report, and information on its status, can be obtained by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by:



Stephen King, Manager-Sr. Advisor, Strategic & Sustainable Resource Management, 490-6188



## **SOILS PARTNERSHIP – SUSTAINABLE PRACTICES**

### **BACKGROUND**

A fundamental objective for Landscape Nova Scotia is to promote active movement toward sustainable landscapes. We recognize that soil is the fundamental foundation for the creation of healthy greenspaces, and have been working to promote standards that will include the use of proper soil composition and quantity. Our membership, which include people and businesses involved in many sectors of the landscape and horticulture industry, understand the fundamentals of plant life, irrigation, drainage, and soil nutrients, and work together to address issues that affect a balanced ecosystem. An essential component in the new paradigm of soils and compost use centers around intended use of the materials and follow up maintenance levels.

The Halifax Regional Municipality (HRM) and Landscape Nova Scotia (LNS) share a common goal – to create sustainable landscapes. We have partnered in this goal recently, with the Resource Recovery Fund Board (RRFB) with the creation of a Soils and Compost Guideline for Nova Scotia. This document, the first of its kind in this region, helps to ensure that there is a compliance with base standards of both soil quality and quantity with regards to the intended use and maintenance levels. The need for this becomes increasingly important as we move toward developing standards that promotes the re-vegetating of areas disrupted by the construction industry.

Soil quality and depth continues to be an issue. Lack of suitable soil conditions to support the sustainable growth of landscapes affect everyone eventually. Current practices are causing an early demise of landscape plantings. We recognize that the short-term, cosmetic gain has guided the lack of dollars injected into the development standards in our province. The traditional two to three inches of soil used on new lawn construction has perpetuated a cycle of homeowner repair and reinvestment. This condition is further exacerbated by poor quality soils, which are often less expensive than more appropriate soil products. This often leads to reliance upon chemical inputs, unnecessary water practices to maintain lush plant growth.

Our partnership for the development of the Soils and Compost Use Guidelines, has received recognition across the country through the Canadian Nursery Landscape Association. We collaborated on a common issue and have made inroads in helping to create a plan that will generate sustainable landscapes. Like LNS, HRM is an environmental steward and has a vested interest in showing how sustainable management practices; composting, pesticide reduction initiatives, ground water management, etc. can create greener communities and healthier residents and overall community wellness. The promotion of minimum soil quality and quantity, as it relates to the end use and maintenance level desired, is a logical next step forward.

### **STAKEHOLDERS/PARTNERS**

This situation is far reaching and extends outward to several groups. LNS has identified the following groups as key stakeholders in our effort to promote increased awareness for sustainable practices:

- Home Owners / Commercial Property owners
- Builders / Contractors
- The Landscape and Horticultural industry and LNS members

- Real Estate Association
- NS Home Builder's Association
- NS Construction Association
- Federation of Municipalities/Municipal planners
- Atlantic Provinces Association of Landscape Architects
- Center for Soil and Water Studies
- Schools / Universities / School Boards/ Community Associations / Sports facility programmers

## **ANALYSIS – COSTS and BENEFITS**

For years, the percentage increase to the cost of a new home construction allotted to landscapes has not kept pace with the lot prices or the construction build costs. As Bruce MacNab stated in an article, Houses With Blinders On, published in the Chronicle Herald on September 9, 2004:

*“One of the greatest challenges of producing a truly energy efficient house is acknowledging that where it is built is as important as how it is built. The absurdity of suburban new home construction that is marketed as energy efficient or environmentally friendly is easily exposed.”*

As municipalities and the public begin to value landscapes – environmentally and financially - builders will be compelled to incorporate a reasonable landscape budget that is in keeping with the current landscape standards. Additional costs will be absorbed by all and will be more than offset as the trend toward environmental stewardship continues.

*By way of example:*

The average cost increase for 2 inches of added soil depth and 10% by volume of added organics will be approximately \$2.00 - \$2.50 per square yard of area landscaped (4” regular soil vs. 6” of 10% OM soil.) This would represent an additional \$2,000 for 800 square yards of lawn area. These costs really play out in a positive way when we equate them to long-term success of the plantings. Successful plantings, especially turf, are required to filter air and water, lessen the groundwater burden on municipal storm sewer infrastructure and control energy use through the seasons by regulating proximity temperature.

The initial installation costs are minimal when we consider the environment impact of continuing to support eco-ignorant landscape practices. Sufficient soil and water resources must be provided for in the short term to protect investment in plantings. The health benefits of vibrant landscapes, not necessarily high maintenance ones, will compensate for any initial inconvenience of construction standards requiring higher inputs and knowledge levels.

## **OPPORTUNITIES – SIEZE THE MOMENT**

In light of the Halifax Regional Municipality's commitment toward sustainable landscape practices, it would seem a reasonable next step to take a more active role in communicating the benefits of minimum soil compliance. The soil industry has been in a state of adaptation over the past decade, and usage standards for quality and quantity of the growing mediums are becoming more relevant as industry becomes more eco-conscious. This is a dynamic time of change for the landscape industry, which compels us to move forward with a new paradigm that addresses long-term solutions. This community based approach through mutual stewardship and leadership is key to long-term success.

## **THE SOLUTIONS**

Landscape Nova Scotia views its membership as an integral part of a solution that will build healthier communities. We have seen that there is an issue with soil quantity and quality in new home construction, and we look forward to continuing our partnership with HRM and stakeholders to find agreement on identifying what needs to change, how we can change it, and what role each can play in this process.

## MOVING FORWARD

### *How do we begin?*

**Coordinate a joint seminar** – This session would bring together stakeholders to address the concerns and work together to find solutions of mutual benefits. The ultimate goal would be to have a Code of Practice that has voluntary compliance by all stakeholders and leads to the implementation of environmentally responsible practices in landscaping and building construction; including a focus on new home construction.

**Develop an Action Plan:** We recognize that we need to start simple and that there is a need to start now! Develop a definitive action plan, assigned to a specific timeline, for phasing in the development guidelines. A requirement for individual properties to provide a minimum of 300 kg of soil per square metre for lawn installations and 800 kg per square metre for shrub and tree installations will prepare properties for long-term successful landscapes. Social patterns have traditionally shown that wide spread acceptance and momentum will soon follow.

**Develop Marketing and Promotional tools:** Develop the necessary promotional pieces that target our key stakeholders. These soft-social marketing approaches will link soil quality and quantity to environmental and financial benefits. We could identify five environmental and sustainable hurdles and draw a straight line to logical changes that address these hurdles and the benefits.

## SUMMARY

The timing for strategic community and industry-based solutions regarding soils is a perfect fit for the HRM. It dovetails with its Environmental Strategic planning and will serve its residents well in the long-term. This partnership with community and industry partnership is groundbreaking and will hopefully set the standard for other municipalities in Nova Scotia and beyond. **Let's seize this opportunity and once again share resources and synergy towards common goals and solutions.**