City of Surrey

Environmental Advisory Committee
Minutes

Executive Boardroom
City Hall
14245 - 56 Avenue
Surrey, B.C.
THURSDAY, OCTOBER 23, 2008
Time: 6:30 p.m.
File: 0540-20

Present:

B. Stillwell - Chair
M. Deo
C. Dragomir
M. Harcourt
H. Locke
D. Maher
G. Sangha
A. Schulze
B. Stewart
Councillor Bose

Absent:

K. Keshvani

Agricultural Advisory Committee Representative

S. VanKeulen

Staff Present:

C. Baron, Drainage & Environment Manager
R. Costanzo, Deputy Operations Manager
O. Croy, Manager Parks
T. Neufeld, Manager Park Ops South
G. Ward, Urban Forestry & Env. Prog.
L. Anderson, Legislative Services

Also Present:

Jim McMurtry
Melodie Tomiyama, Surrey/White Rock Pesticide-free Coalition
Dirk Van Spaendonk, Manager Grounds Maintenance, School District #36

A. ADOPTION OF MINUTES

1. Environmental Advisory Committee ("EAC") Minutes

It was Moved by C. Dragomir
Seconded by G. Sangha
That the minutes of the Environmental Advisory Committee meeting of September 17, 2008 be adopted.
Carried

B. DELEGATIONS

1. R. Costanzo, Deputy Operations Manager

R. Costanzo, Deputy Operations Manager, was in attendance to provide a brief presentation addressing the next steps for stewardship of garbage, how waste materials of all kinds are handled, etc. A PowerPoint presentation was given and comments were as follows:

- Although the change during the first six months of the year was challenging, especially given the logistics of a new company managing waste for a city the size of Surrey, collection services have dramatically improved since early July with the exception of one week in early September when we experienced a considerable spike in yard waste volumes.
- The graph measuring the residential waste tonnages (waste and diverted materials trend) from 1990 to present indicates a significant drop in waste tonnages, despite the fact that the population has significantly increased.
- The drop in garbage is being experienced in the region, with Surrey doing better than most municipalities in this regard.

- It used to be that each household generated 0.9 tonnes of waste in garbage, which has now dropped to 0.64 tonnes of waste per household.
- Future waste management considerations in Surrey include:
  - Single stream recycling (January 1st, 2009). Although this was supposed to begin in January, 2008, there was a delay from the contractor in getting the facility ready. The technology is really quite dynamic. The material that ends up in the landfill after the single stream process is generally less than 3%, compared to the current 5%. It would be beneficial for the Committee to tour the facility once it's operational and ready to accommodate tours.
  - Expansion of compost collection to include kitchen organics. At present there isn't an in-vessel facility large enough in the lower mainland to accommodate the amount of material that would be generated. Metro Vancouver is looking to establish a facility in the lower mainland, keeping a keen eye on Surrey.
  - The fact that we are going to a single stream recycling is a huge benefit, with less vehicles on the road – this follows best practice municipalities that are leading edge for this type of collection and processing. Future considerations for collection may include automated collection, using 90gallon totes to place recyclables, with a full organics program, which leave only the dry material to be collected.
  - Alternative fuel collection vehicles. There are three entities short-listed by Metro Vancouver for their RFP for compost operations. Their technologies propose that they can capture methane from compost material to sell as a natural fuel. The fuel that can be generated based on Surrey's compost tonnage alone may be significant enough to, for example, fuel all the garbage trucks on a regular basis.
  - Surrey's own Reuse website, through partnership with the Recycling Council of BC, has reached new milestones by surpassing over 11,500 exchanges of used goods and a record 6,800 members. The website also provides a host of links to other not-for-profit organizations like Salvavtion Army, Big Brothers, etc.
- Metro Vancouver is introducing a new Draft Solid Waste Management Plan, which is looking at various waste energy facilities. Their Zero Waste Challenge, approved by the Board in early 2007, sets out to do two things with the region's waste:
  - Minimize the amount of waste going to disposal using opportunities to reduce, reuse and recycle; and
  - Give consideration to the conversion of waste to energy.
- There will be an expansion of the traditional 3 R's of waste to 5 R's:
  - Reduce – making less waste in the first place; buying less, choosing products with less packaging, choosing better quality items that will last longer, maintaining and repairing items.
  - Reuse - reusing items again and again: donating reusable goods to charity, finding a new way to use an old item, online re-sale.
  - Recycle - recycling takes a product and turns it into something else. Fleece from pop bottles, newsprint from office paper.

  - Recover - large-scale composting and waste-to-energy can both be designed to capture energy from the breakdown or incinerating processes.
  - Residual - waste that is left after all the other 4 R's have been exhausted. A small amount of treated waste will require final disposal, likely in a landfill.
- Existing stewardship programs:
  - Medications. The program's intentions are to divert expired and/or unused medications from landfills and sewers, as well as to ensure safe and effective collection. Unused pharmaceuticals pose a significant health, safety and environmental hazard when improperly stored or disposed to the environment. Sites that accept unused pharmaceuticals can be found on the Metro Vancouver website.
  - Oil filters and empty containers. There is a strong market for used oil. Re-refining used oil completely restores the original lubricating properties of the oil and takes about one-third of the energy of refining crude oil to lubricant quality. Recycled oil is used extensively in the production of asphalt for roads and highways and is also burned for energy. Oil filters are shredded, heated to a molten state and metals re-used as material for other metal products such as rebar, nails and wire. Empty plastic oil bottles are recycled into new containers, plastic flowerpots, plastic pipe, guardrails, fence posts and plastic patio furniture.
  - Tires. Over 80% of the scrap tires collected are recycled into products, mostly recycled into crumb rubber, which are granules of rubber with the steel and fibre removed. Crumb is used to create a variety of products including athletic tracks and synthetic turf fields; non-slip pavers for patios, walkways and playgrounds; colourful, resilient flooring in recreational facilities; flooring and mats for agricultural and industrial use; and asphalt rubber. In addition, highway truck tires are made into mats used in the construction industry as blast mats or in the oil and gas industry as temporary road mats. The remaining 20% of scrap tires collected are used as a fuel supplement in the cement and pulp and paper industries.
  - Paint, flammable liquids, pesticide and gasoline. In Metro Vancouver, Product Care operates 18 depots where consumers can return leftover paint and nine depots that will take flammables, gasoline and pesticides. There is no charge to drop off leftovers that are accepted by the program. Depending on the product it is either reused (paint), reprocessed (flammable liquids/gasoline), or incinerated (pesticides). To a smaller degree, materials such as paint are reprocessed into road-asphalt based products.
  - Electronic waste. Recycling of electronics involves processing to recover raw materials such as metals, glass and plastics. Items acceptable at present include desktop and laptop computers, computer periphery, printers, monitors and televisions.
  - Beverage containers.
    - *Aluminium cans* - are crushed, baled into a large block and then transported in bales that weigh over 20 tons and contain over 1.2 million containers. These bales are sold as a commodity and

the aluminium is melted down and reformed into more aluminium cans. This entire process only takes 60 days before the old container is recycled, refilled and back on the store shelf.

- *PET (clear plastic)* - containers are baled and shredded into plastic flakes which are sold as a commodity. In some cases plastic is put through a process whereby it is turned into a fibre that can be used to make fleece jackets and vests, among other items.
- *Glass* - containers are crushed into pieces that can then be ground back into sand. The sand is then sold for use as mix in sandblasting material or is made into fibreglass used to insulate homes.
- *Aseptic or Tetra pac (drink boxes)* - are made up of three material types: paper, an aluminium lining and a plastic coating. Each container goes through a hydro-pulping process that separates the different material types. The resulting paper pulp is then used to make cardboard boxes of all shapes, sizes and colors, as well as toilet paper.
- *Bi-metal* - beverage container metal tins and cans are baled and then melted down to be turned into scrap metal, which can then be used as construction re-bar.
- Gable tops (which have been added to our recycling stream this year) - are made only of paper and plastic. Each container goes through a hydro-pulping process that separates the different material types. The resulting paper pulp is then used for all kinds of industrial paper products.

- The various stewardship programs are borne out of waste coordinators meeting on a monthly basis. Future stewardship program considerations include mercury containing devices (e.g. florescent tubes and old thermostats), an expansion of the electronic waste program to include other household electronic devices such as clock radios and reduced packaging.
- A common concern from the public has been the ability to recycle Styrofoam. The vast majority of processors do not process Styrofoam, it is hugely problematic to the machinery, often creating a fire which can ruin a few tonnes of good recycle material. Some retailers recognize this problem and have been offering to collect the clean Styrofoam (from packaging) from their customers.

Noting that agriculture is one-third of Surrey and that the rural community farmers do not have garbage pick-up, there was a brief discussion regarding the need for a transfer station in the South Surrey area. R. Costanzo noted that while a full sized Transfer Station facility similar to the Port Kells facility will not likely be supported nor required, the City is still pursuing Metro Vancouver for a Residential Drop-off (RDO) waste disposal and recycling site to be located and operated ideally near the centre of the City. Beyond that, the City would consider a similar (RDO) site at additional locations in the City if required and supported by the community.

2. Heide Hermary, Gaia College

At the September 17, 2008 EAC meeting the EAC passed the following resolution: *"That the Environmental Advisory Committee invite Heide Hermary, head of Gaia College, to speak to the Committee on the question of organic landscape management and that representatives from the Surrey School Board be invited to attend."*

Heide Hermary was in attendance to provide the presentation on organic gardening as requested by the Committee, which included a PowerPoint presentation and information on creating a healthy environment and healthy vibrant gardens without pesticides. Comments were as follows:

- Once we see things differently and develop a relationship working with nature, it will become apparent we can do things differently.
- It is important to understand the connection between the garden below and the garden above ground, neither can exist on its own.
- Nature left to its own devices is gorgeous.
- The garden is an interdependent web of life, a cooperation between plants and special bacteria.
- Plants extract carbon from the air and turn it into carbohydrates. 100% of the carbohydrates we eat are because of plants.
- Nitrogen also exists naturally as a component of air. Nitrogen does not naturally exist on its own in soil.
- There are certain types of bacteria that take nitrogen from the air and turn it into protein building blocks. Plants could not get their nitrogen any other way.
- Nitrogen fixation requires carbohydrates. There is an absolute fundamental interdependence. Cooperation between plants and nitrogen fixing bacteria is the very foundation of life as we know it.
- The ecological purpose of plants is to be eaten.
- Even more important, plants enter into relationships, strategic alliances with other species; propagation, food and defence.
- A plants' entire sexual strategy depends on animals, which is an ingenious solution as plants can't move). The plant relies on the intermediate services of insects to fertilize and produce offspring. In essence, the plant hires pollinators (butterflies, bees, etc.) that are paid for by food (nectar, pollen, etc.). The downside of all of this is that without pollinators there is no food and no plants.
- In California bee colonies have collapsed. On an ecological scale, it will mean no plants. They will cease to exist because they can not propagate themselves. Research points towards the use of pesticides as the leading cause.
- Pesticides diminish what nature would do itself. When something even as safe as soap is used, the plant's first and second line of defence is destroyed, making it very vulnerable.
- There is a unique association between plants and soil fungi. Fungal hyphae, which are very fine filaments, can enter the roots of plants (then called mycorhizae), and can grow over great distances, providing an

opportunity for nutrient sharing between trees spread over large areas. Pesticides may kill these fungi components.

- Plants actively and deliberately trade 50% - 80% of their carbohydrates with their allies for nutrients, water and defence; it is a trade system where each can benefit.
- As to the relationships between plants, these can be competitive or collaborative. For instance, grasses may inhibit the growth of certain types of young trees by 50%.
- Nutrient sharing can also take place via root grafting. The stump gets its energy to regrow from the energy of other plants.
- Chemical signals (semiochemicals and other pheremones) warn other plants of predator attacks. Plants can sometimes protect themselves.
- Plants have very sophisticated communications with insects (e.g. availability of nectar and pollen; availability of prey; nutrient status, etc.)
- The healthy plant is invisible to many of its predators.
- "Disease and insect infestations are nothing more than nature's way of saying there is a nutrient deficiency in plants which makes them nutritionally unfit for higher life forms to consume." *Arden Andersen.*
- Pesticides do not cure the nutrient deficiency. They can simply kill the plant.
- Pesticides may not work in the long run, with some insects and weeds able to adapt and become pesticide resistant.
- In order to solve the pesticide problem, we have to get to the root, which is nutrient deficiency. Pesticides:
  - do not cure nutrient deficiency;
  - may poison the plants themselves;
  - may poison some of the pollinators; and
  - may poison the soil dwelling organisms.
- The greatest biodiversity on land occurs in the top few inches of the soil.

Discussion on the biodiversity of the land ensued. Some information was given on the types of fungi, bacteria, protozoa and nematodes that can be found in the soil and the roles in which they play. Comments continued:

- One gram of topsoil contains 10,000 bacterial species.
- One gram of compost contains 100,000 to 100 million of actinomycetes, 10,000 to 1 million fungi and 100 million to 1 billion bacteria.
- Ideal soil is created by soil dwelling organisms. It should be 50% solids and 50% space. 25% air, 25% water of the solids, 45% minerals, 5% organic matter.
- All of these soil organisms help to reduce soil compaction, thereby increasing water holding capacity and infiltribility.
- In terms of increased soil fertility, two bugs are better than one.
- Plant health and diversity are directly related to soil biodiversity.
- If we take our turf and remove the biodiversity, we will have something akin to a desert. If you stopped trying to maintain it with aeration and fertilizer, the turf would revert to a desert type.
- Organic land care gardening does things different. In conventional gardening we may resort to chemicals. Instead of feeding everyone, we feed plants directly.

- Conventional gardening – chemical and mechanical solutions:
  - Feeding plants, killing insect and plant "pests" – sometimes with toxic chemicals.
  - Dethatching lawns – mechanically removing un-decomposed plant residue.
  - Aerating – mechanically structuring the soil.

M. Deo left the meeting at 8:30 p.m.

- Result – 1st stage of chemical horticulture: reduced microbial activity:
  - Reduced soil water holding capacity requiring significant water inputs.
  - Increased compaction requiring mechanical solutions (aerating).
  - Soil nutrient imbalance results in weed infestations.
- Result – 2nd stage of chemical horticulture: reduced plant health:
  - Plants become dependent on synthetic inputs and mechanical maintenance (dethatching).
  - Plant nutrition becomes imbalanced.
  - Plants become afflicted with pests and diseases.
- Result – 3rd stage of chemical horticulture: increased pesticide use and costs:
  - Pesticide use
    - Ecological health consequences.
    - May impact human health.
    - Rising costs.
    - Declining landscape value.
- Organic gardening - biological and ecological solutions:
  - Creating integrated communities, providing food and habitat for all.
  - Feeding the soil dwelling organisms.
  - Increasing microbial diversity.
- Leave the leaves. Leave the grass clippings to decompose naturally.
- Sometimes in organic gardening, we add nutrients, but usually only in the transition stage, and use materials such as fish fertilizer or kelp. We can also use lime or rock phosphate to rebalance the soil chemistry.
- Increase microbial diversity only during the transition. Compost and compost tea may be used to stimulate fungal and bacterial action and growth.
- Adding mycorrhizal fungi to the potting mix may vastly improve the health of the plant.
- All waste is recycled into food to feed the soil dwelling organisms, to hold water, and so on.
- To recap, the first stage of organic land management is increased microbial activity. Increased soil fertility can lead to reduced soil compaction. The second stage is increased health of the plants in the garden. Third stage is reduced cost – lower fertility management costs, no pesticide costs, less labour costs.
- The focus is on plant health, not pests. If you focus on plant health, you create healthy gardens.

Health Focus	Pest Focus
Increases biodiversity	Decreases biodiversity
Increases water availability	Decreases water availability
Iincreasing abundance	Declining ecosystems
Healthy gardens,	Sick gardens
Welfare approach	Warfare approach

Information on the various staff training programs through Gaia College was discussed. It was noted that Gaia College is a "virtual college" and does not have a building. Courses have been developed, in partnership with various institutions, including their close association with the Society of Organic Land Care, to offer courses within various communities (Victoria, Burnaby, Parksville and in the province of Alberta). There are 3-day organic soil management and 1-day organic turf management courses that could be available for staff training. In addition, there are 3-hour workshops that are held periodically on organic gardening and organic lawn care. A DVD was provided to the Manager of Parks and various brochures were given the Committee members in this regard. Further comments were as follows:

- In July Council had asked, at the urging of a delegation that suggested a ban on cosmetic pesticides and that a bylaw be enacted, that staff do some analysis and research work and meet with the EAC to discuss the various options, including an overview of the legislative issues in this regard in order to provide well thought out recommendations to Council.
- It is imperative that Staff and the EAC have been exposed to all of the information, which includes a range from making no changes, to what can be done through education, to a complete ban.
- The City Solicitor's office will be able to provide legal Staff to provide an overview of the legislative mandates of the various levels of governments, outlining the existing federal and provincial legislation related to pesticide registration and use, and the potential for cities to develop their own by-laws relating to pesticide use.
- It is not something that can be done in half an hour. EAC should structure a separate workshop and bring in experts to discuss various options to pursue.
- In response to the request for a "road map" to see what the ban would look like, the expenses, etc., it was noted that much of the information is already prepared, including typical pesticide bylaws, costs associated with alternatives should the City choose to become a pesticide-free organization.
- A new bylaw could be adopted very quickly by Council should they choose to do so.
- If we are going to make significant progress, it is going to be a long term effort. The magnitude of shift needs to be seen, perhaps Staff can provide the layout of a year-long program.
- Council is looking at EAC to provide a broader view, to look at and comment on the necessity and options of eliminating the use in the Surrey.
- Suggestion that the Parks Division lead by example. The public won't adopt a change unless they have an example. The horticulture department is the top, when the top changes, the professionals start, others follow.

- Perhaps it would be a real benefit for the EAC to hear about the Parks operations and some of the things they deal with. The average homeowner doesn't know or understand the challenges faced, for instance keeping horticultural beds in traffic islands in reasonable shape, etc.
- The resolution to this is complex. It is going to require all kinds of things to consider.
- If we want an effective bylaw, you have to have the enforcement. We need to make sure we have all the information and that it is well planned out.
- We need to understand what is ahead and we need to know that framework. If the route is that the City can demonstrate how to do these things properly then we have to understand what the Parks Division needs.
- An outright ban is ridiculous; agriculture is already moving that way, it is a natural process. You meet the needs of a certain portion of the public when you ban, but you have to have an alternative for the process.
- With regard to the City asserting a bylaw to residential properties, we have to keep in mind there are people who feel it is their right, however correct or wrong minded, to garden their way. The City should understand what mechanisms other than a City bylaw might be available.
- The EAC should consider a two to three hour workshop, invite the City Solicitor, have a review of the legislative framework and talk about some real life things going on in Surrey at the moment, in order to have some experiences to learn from. Information could be received in one session, followed by a second session to discuss what it is they are wanting to achieve.

It was Moved by Councillor Bose
Seconded by C. Dragomir
That the Environmental Advisory Committee meeting of November 19, 2008 be solely for the discussion of pesticide use and alternatives.

Carried

- Staff, together with the Chair, shall set the content of the meeting.

C. BUSINESS ARISING FROM THE MINUTES

D. NEW BUSINESS

E. ITEMS REFERRED BY COUNCIL

1. Pesticide Use

At the Council-in-Committee meeting held on Monday, July 28, 2008, Council referred the information provided by LEEP and the Surrey/White Rock Pesticide-free Coalition to the EAC for further investigation and a report back to Council.

Further to the information provided to the Committee in this regard and from the delegation from Heide Hermary, Gaia College (item B.2 above), Owen Croy, Manager Parks, will meet with the Committee on November 19, 2008, to discuss and review the proposal to ban the use of pesticides for cosmetic purposes in the City, in order to prepare a report back to Council, complete with recommendations.

F. INFORMATION ITEMS

1. Erickson Creek Integrated Stormwater Management Plan

The Committee noted the Erickson Creek Integrated Stormwater Management Plan Public Open House to be held on Monday, October 27, 2008, 6:30 p.m. - 8:30 p.m., at East Kensington Elementary School, Gymnasium, 2795 – 184 Street.

G. CORRESPONDENCE

H. OTHER COMPETENT BUSINESS

1. Boundary Bay Ambient Monitoring Program Workshop

It was noted that Metro Vancouver is hosting the Boundary Bay Ambient Monitoring Program Workshop on December 9 and 10, 2008, an invitation to which will be forwarded to the EAC in due course. Only one member for each of the EAC and the AAC can attend. Once the invitation is received, any member interested in attending will notify the Chair in order that one may be chosen to attend.

I. NEXT MEETING

The next meeting of the EAC will be held on November 19, 2008 at 6:30 p.m. in the Executive Board Room.

J. ADJOURNMENT

The Environmental Advisory Committee adjourned at 9:56 p.m.

Margaret Jones, City Clerk

Bill Stilwell Chairperson