

NO: **R209**

COUNCIL DATE: **November 16, 2009**

REGULAR COUNCIL

TO: **Mayor & Council**

DATE: **November 16, 2009**

FROM: **General Manager, Planning and Development**

FILE: **6440-20 (2008)**

SUBJECT: **Ecosystems Management Study - Phase 1 Update**

RECOMMENDATION

The Planning and Development Department recommends that Council:

1. Receive this report as information;
2. Authorize staff to hold a public open house to receive feedback on the draft Phase I Ecosystem Management Study report and related mapping, as described in this report and outlined in Appendix I; and
3. Direct staff to report back to Council with the feedback from the public and a recommended final Ecosystems Management Study report and mapping.

INTENT

The purpose of this report is to:

- Update Council on the status of the Ecosystem Management Study (the "Study") and the feedback received to date; and
- Obtain Council's approval to present to the public for comment the draft Phase I report and related mapping at an open house prior to finalizing the Study and mapping for Council's consideration.

POLICY CONSIDERATIONS

The Study provides an update and an enrichment of the City's environmental areas mapping as currently contained in the Official Community Plan ("OCP"). Surrey's existing Environmentally Sensitive Areas ("ESAs") study was completed in 1990, and classifies ESAs in the City as high, medium or low, based on a list of OCP policy criteria. The ESAs have been used extensively, as a reference document in reviewing development and land use applications.

The Study builds on the ESAs approach, but expands the focus beyond how development affects identified ESAs, to the perspective of a city-wide Green Infrastructure Network, where all areas of the City have a role to play in the creation of a green infrastructure.

When approved by Council, the Study report, related mapping and policies will replace the existing environmental ESA mapping contained in the OCP. It is also proposed that the public consultation on the Study proceed concurrently with the public input related to the major review of the City's OCP, which is also currently in process.

BACKGROUND

On March 31, 2008 Council received Corporate Report No. R053, entitled "Update of Environmental Inventory for the Official Community Plan Review", and authorized staff to proceed with the update of the City's environmental inventory.

The purpose of the Study is to:

- Substantially update and replace existing ESA inventory information and mapping;
- Identify and map a City-wide set of ecosystem management areas based on the ecological inventory;
- Develop a recommended set of ecological indicators and policy measures for monitoring these indicators over time; and
- Create a reference document to review development and land use applications, based on a set of policy guidelines.

On July 14, 2008 HB Lanarc and Raincoast Environmental Consulting Ltd were retained by the City to initiate Phase I of the Study.

Phase 1 of the Study, which is nearing completion, has proceeded in three stages. The work has been guided by a Steering Committee made up of staff from the Planning and Development, Engineering and the Parks, Recreation & Culture Departments, as well as a Stakeholder Committee made up of appointed members of the City's Advisory Committees and individuals from a variety of community environmental groups. A list of those on the Stakeholder Committee is attached as Appendix II.

Stage 1 assessed data gaps and included a needs assessment and established the criteria and methods to be used for developing the ecosystem inventory and undertaking the related assessments.

Stage 2 work resulted in a draft set of City-wide environmental inventory maps, including:

- Watercourses, Wetlands, Riparian areas, which were mapped and rated according to their ecological significance;
- Vegetation Communities/Habitat Types, which were mapped and rated according to ecological significance;
- Steep and/or Unstable Slopes, sensitive soils and Groundwater/Aquifer areas, which were mapped and rated according to sensitivity to disturbance; and
- Known and potential sensitive wildlife locations, habitats, and special features.

Stage III work resulted in a draft set of City-wide maps showing Environmental Management Areas (EMAs) (*Hubs and Sites*) and sub-areas (*Corridors*). It identified opportunities to link hubs and sites to create a green network, candidate areas for ecological restoration and enhancement (shown in general form), and a finalized Study report (Appendices I and II) including a framework for Management Planning and Policy Development. It recognized that all of the

lands in the Agricultural Land Reserve ("ALR") provided opportunities for potential wildlife corridors while recognizing the primary role of the ALR for food production.

Phase 2 of the Study will include the development of more detailed management guidelines for the EMAs identified in Phase I, which will assist in guiding the on-going development of the City within the context of a Green Infrastructure Network and integrate it as a key foundation for the City.

PUBLIC CONSULTATION

- Stakeholder Committee meetings were held on March 4, 2009 and March 23, 2009 to display draft Environmental Management Study mapping materials. The Committee included representatives from a variety of community environmental groups in the City and at least one member from each of the Environmental Advisory Committee, the Parks and Community Services Committee, the Development Advisory Committee, the Agricultural Advisory Committee and the Heritage Advisory Commission (Appendix II). The Committee supported the inventory results, but stressed the need to establish ecosystem management guidelines, recognition of ecosystem succession and growth opportunities and recommended a prioritization of management for aquifer/water quality and vulnerable habitats and species. The Committee also identified the need for increased environmental education for a wide variety of the City's demographics to improve input into the consultation process.
- On May 13, 2009 a public open house meeting was held at City Hall at which members of the public were able to review draft ecosystem inventory maps and provide input on the new green infrastructure approach to ecosystem management. Comments received at that time focused around the recognition of the dynamic and changing aspects of ecosystems over time and the certainty that a detailed ecosystem inventory and related mapping could give to development planning. Those in attendance were encouraged by the new inventory results and emphasized the connection between the health and well-being of present and future citizens and the retention and enhancement of a natural environment. Incentive measures for and education of the development industry in association with City-wide and regional cooperation were also identified as key opportunities for success of the Green Infrastructure Network.
- During the Spring of 2009, the Study open house materials were also presented at four open houses related to the 2010 OCP Major Review process. Public input from these open houses indicated that the public was generally pleased with the mapping that had been developed by the City documenting geographic areas and their ecosystem attributes. Comments included the need for protection of streams, riparian areas and major habitat areas, and corridors linking them and noted the need for clear policy direction in the new OCP and in ecosystem management strategies.
- On June 25, 2009 staff held a workshop with the Study consultants, as well as planners, experts and creative thinkers from across the region to consider specific strategies related to using the Study mapping. Results of this workshop are included as Appendix C to the Study report contained in Appendix I to this report.

DISCUSSION

The purpose of the Study is to complete a comprehensive set of ecosystem maps for the City and develop a comprehensive set of policies with respect to the management of ecosystems within the City, which will act to make integrated ecological asset management, or green infrastructure planning, a pillar of land use planning in Surrey. Green infrastructure provides a critical underlying foundation to support the function and quality of communities and provides many social, economic and environmental benefits while supporting the function of ecological systems. Surrey's Ecosystems Management Study is providing visionary leadership within Metro Vancouver by creating a model of how to strategically plan and manage a Green Infrastructure Network of natural lands, urbanized areas and working landscapes, such as the agricultural areas and other open spaces within an urbanizing, in a City-wide context.

In addition to focusing on how to protect significant ecosystems, the City can now use the ecosystems inventory that is a product of the Study to prioritize how and where to invest in managing ecosystem protection and enhancement and to encourage the enhancement of the Green Infrastructure Network.

Vegetation Mapping and Inventory

The vegetation analysis of the Study used a modified version of the US National Vegetation Classification to classify all natural and semi-natural vegetation across the City and beyond Surrey's borders. A total of 17,039 hectares (53.5%) of Surrey's land area was mapped as part of the vegetation inventory. Unmapped parts of Surrey include substantially urbanized areas where vegetation has been heavily modified (e.g., backyards, road margins or vegetation patches smaller than 10 square metres in area). However, the Study does recognize that urban areas can provide ecological value which can complement natural areas of the City.

Green Infrastructure Network Criteria

The EMS identifies a City-wide network of "hubs", "sites" and "corridors" that support the quality of communities and sustain ecological processes and their functions. Green infrastructure includes conservation areas, parks, open spaces, sport fields, wetlands, old fields, woodlands, utility corridors and private gardens. Green infrastructure hubs and sites were identified based on patch size and the degree of "naturalness" of the vegetation they contained, as identified below:

- A **"Hub"** is a contiguous area of 10 hectares or larger with moderate or high naturalness;
- A **"Site"** is a smaller area of less than 10 hectares with moderate or high naturalness;
- A **"Corridor"** is the most natural route or linkage between two hubs; and
- **"The Matrix"** consists of the remainder of the land base with varying ecological value generally found in the urban areas of the City.

Green Infrastructure Network Evaluation

To evaluate the components of Surrey's Green Infrastructure Network, the study developed a scoring system that assesses the relative ecological significance of hubs, sites and corridors. The scoring system assigns a composite "ecological significance score" calculated using (12) criteria that characterize the function and integrity of each hub, site and linking corridor.

Green Infrastructure Network Opportunities

Map 6 of the Green Infrastructure Network, contained in the Study (Appendix C to Appendix I), is an inventory of potential ecological network opportunities within Surrey, and is summarized below.

Hubs

A total of 88 terrestrial hubs within Surrey were identified using the hub delineation criteria.

Sites

A total of 852 terrestrial sites were identified within Surrey. Sites have the potential to be used as "stepping stones" for wildlife or to be part of City-wide networks connected by corridor linkages (Map 8), which are discussed below.

Corridors

Existing and potential future corridors were inventoried based on vegetation, development, watercourses and roads and were assigned a value based on the degree to which each landscape type inhibits wildlife use and movement. A total of 843 potential corridors connecting or near adjacent hubs were identified in Surrey. The importance, exact location and width of many of the corridors are yet to be determined, but their identification through this mapping process shows opportunities to maintain linkages through land development, redevelopment and strategic acquisition.

Regional Network Connections

In addition to providing a City-wide ecological appraisal, the study provided a regional context, as species and ecological processes move between hubs, based on the character of the intervening landscape (forests, fields, urban, rural, utility corridors, roads, etc), and the level to which wildlife is impeded by barriers such as major roads, or can travel freely between jurisdictions and across municipal boundaries.

Green Infrastructure Network Policy Framework

The Study results indicate that high-value ecosystems are not evenly distributed across the City. They are less prevalent and less interconnected in developed neighbourhoods in comparison to less urbanized areas. To effectively manage development in all areas of the City using the inventory results, draft "Strategies for Ecosystem Management in Surrey" were developed and are provided in the Study. These include (9) high level strategies for the Green Infrastructure Network in Surrey, which are introduced below. The strategies are not listed in any particular order of priority.

Proposed Strategies for Ecosystem Management in Surrey:

1. Continue to develop programs and information to raise public and development industry awareness and understanding of ecosystems and related ecosystem planning and management;

2. When considering Neighbourhood Concept Plans (NCPs) and land development applications, work to ensure that the core areas of key remaining large natural areas (hubs) are protected in sufficient scale to be refuges of biodiversity while having regard to economic and social priorities;
3. Give priority to the protection and/or restoration of effective aquatic and/or wildlife corridors that link hubs and sites together, so that plant and animal species are able to disperse and intermix for genetic diversity and population security;
4. Where possible, integrate smaller natural sites and neighbourhood tree canopy and "naturescape" practices into the general urban matrix;
5. Continue with City strategies that effectively manage stormwater, control sediment and erosion, promote tree cover and minimize harmful emissions, recognizing that clean water and natural stream flow regimes, clean air, and mitigation of climate change are key ingredients to support a Green Infrastructure Network;
6. Recognize that agricultural lands, both cultivated and fallow, make a strong contribution to biodiversity and wildlife passage in Surrey, and work co-operatively with the agricultural community to support this function while recognizing the key role of agricultural land in food production;
7. Provide leadership to and encourage public agencies, both City and other levels of government and utilities, to protect, enhance and restore the Green Infrastructure Network, with priority given to establishing linkages between hubs and sites, as well as other biodiversity enhancements on their properties;
8. Incorporate protection and restoration of ecosystems and biodiversity into the planning and development processes of the City. Neighbourhood scale planning, in particular, should recognize green infrastructure features as a part of any development planning or development application review and approval process; and
9. Explore and develop mechanisms to facilitate a fair and equitable distribution of costs and benefits of managing ecosystems and biodiversity in Surrey.

These high level strategies focus on integrating ecological systems into developing neighbourhoods and the existing community framework. A variety of conservation and enhancement actions will be encouraged in concert with land development, growth management, and built infrastructure planning. This can be done in a way that is complementary to the design of complete urban communities and meets the goals of the Sustainability Charter, the OCP and other City environmental policies.

SUSTAINABILITY CONSIDERATIONS

The Study reflects the vision of the City's Sustainability Charter with regard to the Environmental Pillar by encouraging proper stewardship of the terrestrial habitat, aquatic habitat, air, and the built environment and by protecting, preserving and enhancing Surrey's natural areas and ecosystems for current and future generations. In addition, the services of the City's ecological systems and the natural capital stocks that they produce are critical to the long term social and economic well being of the City's residents. Ecosystem goods (such as food) and services (such as

waste assimilation and air/water purification) represent just a few of the many social and economic benefits, directly or indirectly, to the City and its growing population.

A final Study document will be reviewed for completeness and consistency with the Sustainability Charter's Vision, Goals and Scope items using a "Triple Bottom Line" evaluation framework.

CONCLUSION

The current OCP approach to environmental management, which is based on Environmentally Sensitive Areas, has now been updated with new mapping using an ecosystem management approach as documented in the attached Study (Appendices I and II). It is proposed that this new, more contemporary approach form an integral pillar of the City's OCP, based on the principles of sustainability outlined in the Surrey Sustainability Charter. The Environmental Management Study will provide the basis for integrated ecosystem management, by setting high level goals, priorities for enhancement and restoration and by recognizing that all parts of the City can contribute to a Green Infrastructure Network.

Based on the above discussion, it is recommended that Council:

- Authorize staff to hold a public open house to receive feedback on the draft Phase I Ecosystem Management Study report and related mapping as described in this report and outlined in Appendix I; and
- Direct staff to report back to Council with the feedback from the public and a recommended final Ecosystems Management Study report and mapping.

Original signed by
Jean Lamontagne
General Manager,
Planning and Development

JM/MK/kms/saw

Attachments:

- Appendix I Report Book 1 - Ecosystem Management Study Report and
 Report Book 2 - Ecosystem Management Mapping and Photos
- Appendix II EMS Stakeholder Group Members

**Report Book 1 - Ecosystem Management Study Report
and
Report Book 2 -Ecosystem Management Mapping and Photos
(attached as separate document)**

Ecosystem Management Study Stakeholder Group Members

Key Stakeholder Members	Organization
Ron Meadley	Semiahmoo Fish and Game Club
Peter Maarsman	Green Timbers Heritage Society
Ray Hudson	Surrey Board of Trade
Roy Strang	Sunnyside Acres Heritage Society
Phillip Milligan	Semiahmoo Fish and Game Club
Rosemary Zelinka	Surrey Sustainable Communities
Frank Canil	RESCUE
Deb Jack	Surrey Environmental Partners
David Riley	Little Campbell Watershed Society
Margaret Cuthbert	Friends of Semiahmoo Bay Society
Advisory Body Members	Committee/Commission
Gurpreet Rai	Parks and Community Services Committee
Al Schulze	Environmental Advisory Committee
Mani Deo	Environmental Advisory Committee
Ted Dawson	Development Advisory Committee
Avtar Johl	Development Advisory Committee
Mike Bose	Agricultural Advisory Committee
Barb Paton	Heritage Advisory Commission