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10/21/2008

File:

Sharon Fletcher
Director of Planning
8645 Stave Lake Street
Box 20, Mission BC
V2V 4L9

Dear Sharon:

**Re: Official Community Plan Amendment: Silverdale Neighbourhood One
Review and Request for Comment**

The following represents the Environmental Stewardship Division's (ESD) comments on the above referenced OCP amendment and some of the supporting technical documents. ESD appreciates the opportunity to provide this feedback to the District's planning process. The input provided here is intended to identify any information gaps in the assessment and interpretation of ecological values, the assessment of potential impacts, the proposed mitigation and the monitoring plans. These comments should not be construed as support for or opposition to the proposed amendment. Rather our objective is to ensure that the District of Mission Council, employees and public are well-informed of the ecological consequences of accepting or rejecting this proposal.

ESD is encouraged by the LAN.48 commitment to develop a sustainable community, the proposed implementation of broadly dispersed site-level stormwater best practices and the commitment to monitor ecological attributes over a long period of time. However, we suggest there are key outstanding components to the information package and land-use review process; these include: (i) a thorough examination/assessment of anticipated ecological impacts of the proposed land-use plan and (ii) specific assessments/interpretations of existing ecological values.

- (i) Given the current ecological health and biological diversity observed in Southwest Mission, a thorough examination of anticipated ecological impacts from various land-use alternatives is very important to properly inform decisions affecting the future of this landscape. Moving forward with major land-use decisions, including the designation of conservation areas, without defining conservation objectives or evaluating potential impacts will likely lead to an ecologically unsustainable development. ESD strongly urges the District to undertake an ecological impact assessment to be added to the land-use review and approval process.

ESD would be willing to contribute to defining and implementing such an initiative. As a component of our monitoring activities, ESD is currently conducting a literature review of impacts of urbanization, effectiveness of urban-based mitigation techniques and effectiveness of restoration activities in urbanizing environments. Significant, permanent impacts from converting forested ecosystems to urban landcover are repeatedly recognized as a major threat to ecological health and biological diversity, for both aquatic and terrestrial components. Several studies conducted in the Pacific Northwest have articulated a local impact gradient. These studies suggest watershed or landscape-level thresholds may exist; beyond which, biological impacts cannot be meaningfully mitigated or reversed. Our review suggests many of the modern best management practices have not been well tested. It also seems that changes to ecological processes are such that classic, site-level restoration activities may successfully restore environmental structures but not necessarily improve ecological productivity. A review of the supporting technical documents suggests much of the information to conduct this evaluation (including data collected and scientific literature) may already be available.

- (ii) Comprehensive assessment of ecological resources is critical in the determination of appropriate conservation objectives and predicting potential impacts. There are several aspects to the ecological assessment that have not yet been completed. These issues have been previously identified in ESD correspondence.

ESD has conducted detailed review of several key technical documents provided in support of the proposed amendment. Attached are some specific concerns and comments for each of these documents provided to you in the order presented. Further discussions with the District may be helpful to clarify these concerns.

We thank-you for the opportunity to provide these comments. We look forward to continuing to work with the District to ensure land-use decisions are well-informed of ecological issues. If you have any questions or concerns, please don't hesitate to contact me.

Sincerely,

Scott Barrett, R.P.Bio.
Senior Ecosystems Biologist
Environmental Stewardship Division
Ministry of Environment - Surrey

cc. S.Letay, ESD, Surrey
L. Macdonald, DFO, Mission

Silverdale Neighbourhood One Plan – Draft July 15th, 2008

1.6 Planning Process

No timelines for the planning phases are provided. Clarifying specific time periods and overlaps of the various planning phases would be helpful to transparently represent the time and resources afforded the review.

4.0 Sustainability Principles

Principle one provides an excellent opportunity to begin to define categories or specific conservation objectives. As it reads, the principle is broad and will be difficult to assess whether it has been achieved. As previously stated, explicitly identifying specific conservation objectives are critical to evaluating the sufficiency of proposed land-use options and mitigation.

5.0 Goals and Objectives for Neighbourhood One

In general we are in agreement with most of the stated environmental goals however they tend to lack adequate specificity to evaluate if they have been met.

Principal 1 - Goal 1.1

The fourth bullet under the first bullet (“connected wetlands of significant wildlife value”) needs to be carefully and completely defined.

The third bullet should also include clarification that larger riparian areas also function to mitigate against watershed-scale impacts.

The precise meaning of the fourth bullet is not clear.

ESD would recommend that the wording of the fifth bullet be amended; ‘manage’ rather than ‘provide’ access. Our experience suggests that a significant increase in population density, as proposed, would undoubtedly increase human presence in conservation areas. Usually, the issue is in the management of access for both conservation objectives and safety concerns.

Principle 8

We recommend that goal 8.1 incorporate consideration of re-use of rainwater for household plumbing (irrigation, toilets, laundry, etc.).

Sections 8.2.1.4 and 8.2.2.5

The management plans should incorporate monitoring the implementation and effectiveness of wildlife reserve/conservation structures and practices.

Section 8.2.3.2

It should be noted that these areas may also be where rainwater is discharged to promote inter-flow and detention; in order to avoid direct connections/outfalls to streams.

Section 8.2.5

The features “wetlands and streams” should not be included in the opening description. It is appropriate that these features be explicitly addressed elsewhere.

Section 8.4.3.1

Setbacks should be determined and delineated as early as possible. Negotiations at subdivision phase often lead to controversy due to differing assumptions.

Section 12.2.2.1

Once again we recommend this section include consideration of the re-use of rainwater for household plumbing (irrigation, toilets, laundry etc.).

Section 16.3.2.1

Discouraging common driveways may be counter to minimizing total impervious area in the respective catchments.

Environmental Protection and Monitoring Plans – July 2008

Generally, the proposed plans well cover many of the key ecological concerns for the area and are presented logically. In the absence of a comprehensive impact assessment, explicit conservation objectives and more details on experimental designs, it is difficult to evaluate its efficacy. It is also not clear what resources will be committed to fulfill these plans and what timelines are estimated for monitoring activities. In order to detect effects, monitoring may require considerable financial commitment and several years to confirm adequate baseline conditions. Estimates of resource and time requirements would be useful to better understand practical objectives.

The fact that the secondary study area has not been subject to the same level of environmental analysis is also of concern. The implementation of land-use plans for neighbourhood one will restrict the options for conservation objectives and practices for the remainder of development in Southwest Mission. This also heightens the need for a well considered and implemented monitoring and adaptive management plan.

2.1 Background

It is recommended that other species also be considered for the plan including: Phantom Orchid, Snowshoe Hare, Band tailed pigeons. Wildlife corridors also need improved consideration.

2.6.4

ESD does not concur that assessment maps confirm that habitat for Pacific watershrew will not be significantly impacted by the proposed land-use plan. The potential to impact directly and indirectly on in-channel and riparian habitat for watershrews remain a concern; both within the project area or in areas affected downstream.

2.6.5

It is recommended that ecological integrity of habitat for other species, such as Western screech-owl, be accounted for. The apparent population declines for this and other species serves to heighten the value of maintaining and evaluating the suitability and ecological integrity of their habitat.

2.7.2.4

We note there is no mention of initiatives or monitoring for the conservation of the Lazuli bunting population identified in the assessment reports. Once again, the identification of specific conservation objectives would be helpful.

3.4

It should also be recognized that the conservation of larger riparian buffers has been demonstrated to be a key component of maintaining the ecological integrity of aquatic ecosystems at a watershed-scale. It is recommended that this is explicitly described as a conservation objective of riparian conservation.

3.4.1.2

It is important to note that the evaluation of windthrow potential may contribute to the determination of SPEA widths. Staged clearing plans could also be considered so as to slowly expose potential forest edges to new wind patterns and potentially altered soil moisture regimes; allowing standing trees to adapt to new conditions.

3.4.3.1

It is recommended that consideration be given to incorporating tapered-down canopy closure at forest edges in order to mitigate edge effects. This may include the planting of vegetated barriers of varying height to maximize forest interior conditions (visibility, microclimate, noise etc.) within the conservation areas.

3.8

Landscape level wildlife conservation objectives and practices are not explicitly stated. Once again, this makes it difficult to assess how well they are being achieved. Plans to manage animal salvage, clearing activities (nest protection etc.) and habitat enhancement work do not address fundamental conservation issues for terrestrial ecosystem integrity or species-at-risk.

3.8.1.2

It is recommended that nest buffers be identified well in advance of site development phase.

4.1

It is recommended that some other components be added to the monitoring scope and objectives including:

- Sub-basin scale landcover attributes.
- Landscape level connectivity analysis.
- Habitat assessments for both aquatic (channel and near channel riparian assessment with appropriate expertise) and terrestrial ecosystem components.
- BMP implementation.
- Terrestrial biological indicators.

4.2

Another objective of the monitoring project is to determine if resources to mitigate impacts have been well-spent. This could be explicitly stated.

4.3

ESD is familiar with some specific hydrometrics used in watershed-based spatial comparisons in the Pacific Northwest that appear to be very sensitive in detecting changes due to urbanization. We would be happy to explore these further with the District.

4.4

ESD is encouraged to see water quality parameters identified. It is anticipated that these data along with the hydrometrics will be the key pieces in an adaptive management plan.

4.5.1

ESD recommends that the RFI analysis include multiple buffer widths to account for viability of habitat for a multitude of species and overall ecological integrity (15, 30, 50 and 100m).

4.5.2

It should be clarified that biological indicators are useful to confirm the significance of environmental impacts observed by other variables such as hydrometrics, habitat assessments and water quality monitoring. Due to issues of natural variability, unconfirmed mechanisms and analysis costs, biological data may not be the best variables as key triggers for adaptive management.

4.7

ESD recommends that variables that assess the integrity of ecosystems be included in this monitoring plan. We suggest the District consider the use of terrestrial bio-indicators confirmed as useful to inform planners of the integrity of habitat for other species not identified here.

4.7.2

We recommend this section also include some assessment of habitat integrity for red-legged frogs.

4.8.1

We also recommend that surveys for Vancouver Island Beggarticks and Phantom Orchids also be included.

Integrated Stormwater Management Plan (ISMP) Stage 1 – Inventory – June 2008

3.1.1 Land Use

The Ministry of Environment has recently completed an analysis of landcover based upon 2004 orthophotos that covers the SURA, at one meter resolution. These data may helpful to calibrate analysis conducted in this plan.

The Ministry would also appreciate having access to digital versions of the drainage basin boundaries displayed in Figure 2. This information will form an important variable in the monitoring plan and could be used to conduct predictive analysis of ecological impacts.

ISMP Stage 3 – Strategy – July 2008

Generally, ESD is impressed by the focus on on-lot source controls to create a highly-dispersed management system. ESD is also encouraged by the recognition that the “first tier” in the approach (local, highly dispersed techniques) may be the best known way to manage frequent rainfall and largely serve to maintain the regular natural environmental functions in developed landscapes. However, it should be explicitly recognized that this approach presents some significant regulatory and practical challenges in terms of implementation and maintenance.

We are also concerned that the lack of detailed information required to adequately predict both the precise BMP's to be implemented and ultimately the ecological impacts. As stated by the strategy, the developer/builder will be largely responsible for configuring and sizing a system to suit local development conditions.

Figures 3.1 a & b suggest that overland flow currently represents 9% and 4% of Harp and Jamieson Creeks respectively. These values seem high.

It is stated that storm pipes will be open-jointed. ESD recommends that this be undertaken cautiously so as not to inadvertently intercept areas of natural inter-flow (particularly low-flows).

The strategy proposes that all conduits should be sized to convey the predicted design flow at no more than 80% full. While it is recognized that it is necessary to adequately manage flood risks, this approach may compromise the impetus to ensure the function and maintenance of broadly dispersed BMP's such as on lot source controls. ESD is concerned that the construction of oversized pipes may create the temptation to bypass source controls and tie into the conventional pipes in the face of localized nuisance drainage concerns.

The TIA values presented in Table 3.1 are presumably proportional to the area of each of the development catchments. It would be helpful if these were calculated for each of the stream or reach sub-basins/watersheds.

ESD agrees that most studies suggest the use of native soils and vegetation perform well at removing non-point source pollutants (bioswales etc.). However, the practical issues of applying this approach in steeper sloped areas is a concern; limiting its potential application.

Unfortunately, we have some technical difficulties printing off and reviewing Stage 2 of the ISMP and the Fisheries Setback Zones. We will endeavour to review these documents and provide comments to the District as soon as we are able.