

May 4, 2007

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To: City Manager

From: General Manager Planning and Development

Subject: **Review and Update to the City's Low Impact Development (LID) Policy and Procedures**

For: **Council**

**Recommendation:**

That Council:

1. Receive the staff report dated May 4, 2007 regarding the City's Low Impact Development (LID) Manual, further to a deferred motion (attached) by Council on April 16, 2007; and
2. Direct staff to update and revise the Low Impact Development Manual in accordance with the recommendations outlined in the May 4, 2007 staff report and presented as Option 2.

**Executive Summary:**

This report is provided for Council's consideration and further to recent discussion related to the implementation of the City's Low Impact Development (LID) Manual. Over the last number of years, significant effort and study has been put forward to address and mitigate the associated impacts of land development on the existing environment. The Hyde Creek Integrated Watershed Management Plan recommended the use of low impact development measures as they relate to rainwater capture, management and control. The City's LID Manual was prepared to establish policies and procedures to implement those measures. With urban development in Northeast Coquitlam imminent, it is timely to review the LID Manual and to propose revisions to better balance watershed benefit with practical, administrative and cost concerns.

**Background:**

Concerns have been raised by the development community and landowners regarding difficulties in implementing the City's Low Impact Development (LID) Manual in Northeast Coquitlam. As a result, City staff has been in discussions with developers and homebuilders to review the requirements of the current LID Manual. With development in Northeast Coquitlam imminent and with experienced homebuilders now working to incorporate LID measures in their development projects, staff is proposing a number of significant revisions to the LID Manual. The basic goal that is reflected in the recommended revisions has been to simplify the regulations and to address the development community concerns while still seeking to mitigate the impacts of urban development on watersheds.

At the April 16, 2007 Council meeting, a Notice of Motion (Attachment #1) regarding the LID Manual was deferred by Council pending a staff report that addresses a number of questions raised at that meeting. This report provides both information responding to those questions (Attachment #2) along with a recommended approach for dealing with the concerns related to the LID Manual.

**Discussion:**

In December 2004, Council adopted by resolution the LID Manual that sets out a policy framework for the management of storm runoff associated with urban development. The Manual sets design criteria and specifications for a number of low impact development techniques that capture, manage and release rainwater, in a controlled manner, on a site-by-site basis. The LID measures aimed to address stormwater management goals as set out in the Hyde Creek Integrated Watershed Management Plan (HCIWMP).

LID measures strive to mitigate the effects that urban development will have on watershed health, which include:

- flood protection and stormwater management;
- stream corridor protection;
- water quality protection;
- erosion and sediment control;
- summer base flow protection; and
- maintenance of the productive capacity of natural habitats.

**Discussion:** cont'd/

In order to address these overall watershed issues, the HCIWMP strives to manage stormwater impacts at three levels:

1. A large diameter stormwater diversion system to DeBoville Slough, now under construction, to control peak stormwater flows;
2. Small water quality ponds at various locations to address water quality issues prior to the discharge of flows at a managed rate to watercourses; and
3. Low Impact Development (LID) measures at a localized level to detain some storm runoff from smaller “everyday” storm events in a way that mimics natural, pre-development processes, in order to control stormwater quantity.

The primary goal and objective of LID measures – the third component of the HCIWMP – is to augment summer base flows in watercourses and to protect water quality and stream health within the watercourses of the Hyde Creek Watershed.

The current LID Manual sets requirements for the following eight (8) measures:

1. placement of absorbent soils to a minimum depth of 300 millimetres;
2. on-lot infiltration trench with overflow to piped system for roof runoff;
3. on-lot permeable paving;
4. absorbent and structural soils for boulevard street trees;
5. street trees within the public road right-of-way;
6. vegetated roadside swales;
7. permeable asphalt within public lanes; and
8. future maintenance requirements.

**What concerns have developers expressed about the current LID Manual?**

As noted, developers and landowners who are now initiating development in Northeast Coquiltam have raised a number of legitimate concerns about the LID measures currently required in the City’s LID Manual. These include:

**Discussion:** cont'd/

**What concerns have developers expressed about the current LID Manual?:** cont'd/

- Watershed benefits are disproportionate to the costs of installing the measures (i.e. limited “bang for the buck”);
- Installation of on-lot measures is physically difficult and/or impractical on compact lots;
- Reliance on professionals for site-specific solutions is onerous and adds cost;
- Complex procedures for relatively simple techniques; and
- Evolution and performance monitoring of techniques still occurring.

With an understanding of these concerns through discussions at two recent workshops with Northeast Coquitlam developers and recognition of the need to maintain to the greatest extent possible a natural systems approach within the City's watersheds, staff is recommending a number of modifications to the LID Manual as outlined in this staff report.

#### **Questions raised about LID's**

A number of questions have been raised about LID's by Council members and participants of the recent workshops. Responses to these questions have been prepared by Kerr Wood Leidal Associates Ltd. (the City's professional consultants currently undertaking the Partington Creek IWMP) in Attachment #2.

In general, it is acknowledged that there have been some challenges in applying LID measures in the Vancouver region, but much is being learned. The kinds of LID measures contained in the current LID Manual have been implemented elsewhere in the region; they have been and continue to be monitored and successful results have been achieved. It is recognized, however, that consideration of the costs relative to the benefits is something that must be recognized in determining what LID measures are appropriate in different settings.

Kerr Wood Leidal Associates Ltd. has also highlighted the purpose of LID techniques and their intent to simulate the capture of rainwater that was previously held in the vegetation canopy and soil layer of the forests that exist prior to development in greenfield sites. However, it is also understood that on-site LID measures must be appropriate and commensurate with the scale,

complexity and density of development. Larger scale, higher density residential projects along with commercial and institutional developments

**Discussion:** cont'd/

**Questions raised about LID's:** cont'd/

are felt to offer greater opportunities for incorporating a wider range of LID measures and features within project design while on-site LID measures for new single family lots need to be practical, low cost, low maintenance and not encumbered with complex administrative and implementation procedures.

### **Proposed Revisions to the LID Manual**

Further to a review and discussions with the development community, professional consultants and outside municipalities, staff has concluded that a number of revisions would be appropriate for the City's LID Manual. Proposed changes to the LID Manual would include:

- Remove the requirement for on-site infiltration for all compact and medium size single-family lots (i.e. not required for RS-7, RS-8 and RS-9 lots) given practical (spatial) and cost considerations. Only the largest single-family lots (RS-10 and RS-11), where space permits, would incorporate on-site infiltration trenches or alternative measures if site constraints exist, and for these, a standardized design that eliminates the need for professional design involvement would be provided in the updated Manual.
- Delete requirement for the registration of restrictive covenants.
- Delete requirements for on site security deposits to be posted by developers and incorporate practical and straight forward on-site LID measures through existing Subdivision and Building Permit processes, including inspection. This will significantly streamline the administration process.
- Delete the requirement for registration of restrictive covenants that would have addressed longer term maintenance issues, as the proposed on-site infiltration trench has an overflow to the City's storm sewer system.
- Remove all requirements for permeable pavements within City roadways (i.e. lanes, if and where they exist), given practical, construction and maintenance concerns.

**Discussion:** cont'd/

**Proposed Revisions to the LID Manual:** cont'd/

- Delete the requirement for roadside swales in all areas with fronting urban development. Other off-site alternatives such as below grade retention trenches, rain gardens or biofiltration areas within newly developed roads or parks would be incorporated to achieve commensurate benefits.
- Remove requirements for permeable driveways within the single family zones; however, encourage and promote the use of on-site best management practices including permeable pavements and grading of hard surfaces to the greatest extent possible toward lawns, planting areas, rain gardens and related landscape techniques.
- Maintain the requirement for a minimum of 300 millimetres of absorbent top soils for all grassed and vegetated areas. There is general consensus among the parties consulted that this measure is effective and cost-effective.

Through these proposed revisions to the City's LID Manual, it is recognized that everyone involved in the development process -- including the final homeowner -- has a role in limiting their environmental impact within a watershed. These refinements look to ensure that watershed impacts are effectively mitigated in these early stages of development but that implementation and cost concerns are fully addressed.

It is further noted that the City's LID Manual applies to all areas of the City where an adopted watershed management plan has been completed. This approach is in keeping with City policy as set in the Citywide Official Community Plan. As further watershed management plans are undertaken for other watercourses in the City, the LID policies will apply; accordingly, over time, these policies and principles will apply more comprehensively throughout the City.

**Summary of Options Available to Council:**

As noted, staff has reviewed the concerns raised and has proposed a comprehensive set of revisions to the City's LID Manual. This report seeks Council support of a recommendation by staff to proceed with these revisions (Option #2 as described below). Nevertheless, Council has at least three options to consider at this time:

**Summary of Options Available to Council:** cont'd/

- Option 1) Maintain existing policies and procedures as established within the current Low Impact Development Policy and Procedure Manual.
- Option 2) Authorize staff to prepare amendments to the City's LID Manual, as outlined herein, for Council consideration at the May 28<sup>th</sup> Committee of the Whole meeting.
- Option 3) Proceed with consideration of the Notice of Motion that was deferred at the April 16, 2007 Regular Council Meeting.

**Conclusion:**

Staff has discussed a number of LID implementation related issues with the development and construction industries and professional consultants. While support of a natural systems approach to watershed management appears to exist, a more balanced recognition of practical, administrative and cost constraints is needed. To ensure that the City's LID approach is as effective as possible while being practical and cost-effective, staff has proposed significant refinements to the LID Manual and is recommending that Council authorize the preparation of such amendments for its future consideration.

J.L. McINTYRE, MCIP

JC/KTM/JMc/ms/ch

Attach.