

Watershed Planning and Rainwater Management: Creating the Future in the City of Coquitlam

Part B – Implementing a Watershed-Based to Community Planning in Coquitlam

4. Source Control Implementation Challenges Led to a Refined Strategy

To accommodate the projected addition of 25,000 people over the next 20 years in NE Coquitlam, the City applied the OCP amended watershed-based approach to community planning. In 2002, the Hyde Creek watershed was a rural residential, greenfield area in Coquitlam featuring fish bearing creeks, prime salmon spawning habitats and forested steep slopes.

The IWMP was initiated to provide for the cost-effective development of the watershed while protecting environmental and community values.

With the adoption of the *Hyde Creek Integrated Watershed Management Plan* (IWMP), the City embraced a terminology change to ‘watershed’ plan from ‘stormwater’ plan. This change recognized that the components of a truly integrated plan extend far beyond drainage planning.



Hyde Creek IWMP Recommended Rainwater Management

Drainage criteria recommendations from the IWMP incorporated a new drainage planning philosophy to address peak flows, water quality and manage everyday rainfall events in a way that mimics the natural, pre-developed condition.

The *Hyde Creek Integrated Watershed Management Plan* called for site level rainwater source control measures and established an infiltration target for rainwater capture on individual properties. A *Low Impact Development Manual* (LID) was developed to provide developers with direction as to how to achieve this target.

At the time, LID measures were only being implemented on a limited scale by a number of jurisdictions, mostly in the United States. Standard specifications and design details were not generally available, although the Greater Vancouver Regional District had developed design guidance for some LID measures for use by local municipalities.

Those documents and others were used to develop the specifications and drawings for LID measures to fulfil the recommendations of the Hyde Creek IWMP. The LID Manual was developed through a series of workshops involving consultants, developers, builders, City staff and other stakeholders.

Low Impact Development (LID) Implementation

The City's *Low Impact Development Manual* used a prescriptive approach which included specifications and detailed drawings for absorbent landscaping, structural soils, street trees, on-lot infiltration trenches and vegetated swales.

Implementation of the works required changes to the development application process at both the subdivision approval and building permit levels.

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Regulatory Changes: Construction was to be designed and completed to the satisfaction of a professional engineer and landscape architect. The manual also proposed security deposits for construction and maintenance and suggested that an agreement for completion of the works should be registered on the property title.

New approaches for inspection during construction by City staff were also required. Approval for drainage works on individual building lots were now subject to the same level of control as subdivision approvals, with completion deadlines triggered by the building permit process, rather than registration of a plan of subdivision.

Unintended Consequences of Implementation: Concerns about LIDs were heard regarding:

- complex procedures
- reliance on professionals
- onerous requirements
- high costs; and
- uncertainty regarding infiltration effectiveness in glacial till soils, steep terrain, and a wet climate.

“The requirements for restrictive covenants, securities and professional oversight for design and installation proved to be particularly difficult for single family home builders and home owners,” says Jason Cordoni, the City’s Development Servicing Supervisor.

“The requirement for an additional regulatory process and inspection at the building permit level also proved to be challenging for the City to implement.”



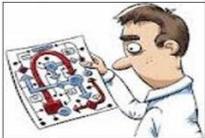
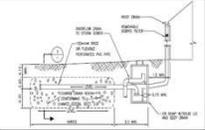
In April 2007, Council put a hold on the full implementation of LID measures until the City could demonstrate, through analysis and testing, that the implementation of the measures met benchmark standards for their function.

Staff were also directed to undertake an analysis of the costs involved with constructing and maintaining the systems.

Lastly, Council instructed staff to update and revise the Low Impact Manual

“While interim measures such as roadside infiltration, absorbent topsoil and rain barrels were still being incorporated into the subdivision and building designs, further analysis and study were required to justify the use of more complex applications such as the on-lot infiltration systems at the single family home level.” Jason explains.

Adopted in December 2004, the Manual set in motion a prescriptive process for implementing rainwater capture on individual building lots

<p>1. Legislative Framework</p> 	<p>2. Changes to Approval Process</p> 
<p>3. Source Control Specifications</p> 	<p>4. Construction and Inspection</p> 

Need to Revisit the Strategy

“Developers and builders had difficulties implementing the LID requirements,” states Jim McIntyre, General Manager for Planning and Development. “Questions were also raised about the effectiveness and longevity of essentially private, onsite works,” he adds.

