



BCWWA



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## **Green Infrastructure Partnership**

# **Celebrating Green Infrastructure: Summary Report on 2006 Showcasing Innovation Series**

**First Release:**      October 2006

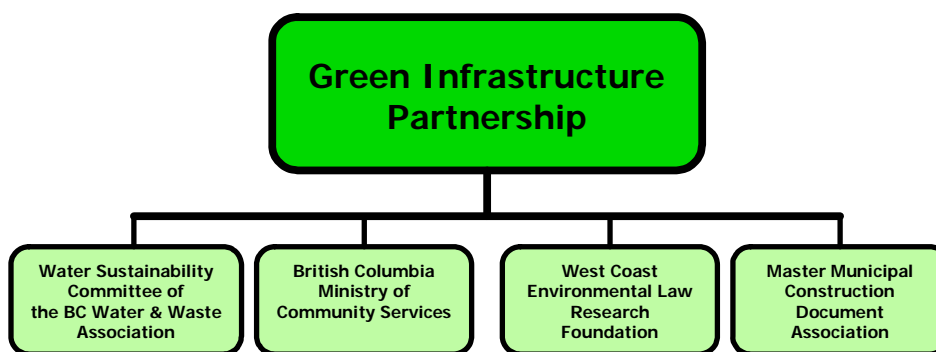


# Celebrating Green Infrastructure – Showcasing Innovation Series Convening for Action in the Greater Vancouver Region

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## FOREWORD

**THE GREEN INFRASTRUCTURE PARTNERSHIP** was formed in 2003 and is a consortium of four organizations. Its mission is to facilitate implementation of *design with nature* infrastructure practices and regulation province-wide.



**IN RECENT DECADES, THE HIGH GROWTH REGIONS** of British Columbia have been experiencing *cumulative impacts* as a result of pressures on land and water resources. The desire to mitigate environmental and social impacts has provided a driver for the 'green infrastructure' movement across North America, and especially in British Columbia.

Looking ahead, the challenge for high growth communities is to make informed choices that will produce *cumulative benefits* over time, and thereby ensure long-term community liveability.

**THE SHOWCASING INNOVATION SERIES** was funded by the Stormwater Interagency Liaison Group (SILG) of the Greater Vancouver Regional District. The series goal is to build regional capacity through sharing of green infrastructure approaches, experiences and lessons learned as an outcome of 'designing with nature'.

In October 2006, the Green Infrastructure Partnership met with the Sustainable Region Initiative Task Force, a committee of mayors, to report out on the success of the Showcasing Innovation Series and seek support for program expansion to include elected officials.



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District of North Vancouver  
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## SECTION 1

# Context for Series

## 1.1 Water Sustainability Action Plan

The Water Sustainability Action Plan for British Columbia is advancing an array of interconnected and on-the-ground partnership initiatives that promote a ‘*water-centric*’ approach to community planning. The managing partner for program delivery is the Water Sustainability Committee of the BC Water & Waste Association (BCWWA).

### Water-centric planning means...

- We will plan with a view to water – whether for a site, a region, or the province
- We will integrate missions, mandates and accountabilities
- We will move towards a water balance way-of-thinking and acting



Water OUT = Water IN

**Green Infrastructure Partnership:** Under the umbrella of the Action Plan, the mission of the Green Infrastructure Partnership is to facilitate implementation of infrastructure practices and regulation province-wide that embody a *design with nature* way-of-thinking and acting. Because everything is connected, the way we develop land determines how water is used, and how water runs off the land. Hence, if we design with nature, then the *water balance* can be maintained or potentially even restored over time.

**The driver for the Action Plan** in general, and the Green Infrastructure Partnership in particular, is the issue of how to accommodate a doubling of the population in the growth regions of British Columbia....while at the same time achieving community visions for a livable future.

### How Will British Columbia Accommodate A Doubling of the Population & What Will Our Growth Regions Look Like ?



**Addressing this issue** requires thinking in terms of a continuum:

- where we are now (*the starting point*)
- where we wish to get to (*the end point*); and
- how we will get there (*the strategy*).

Addressing this issue also involves thinking in terms of accruing *cumulative benefits* over time, rather than *cumulative impacts*.



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## 1.2 Green Infrastructure Partnership

Infrastructure design is in a major sea-change, and British Columbia is in the vanguard of that change. The Green Infrastructure Partnership is promoting an integrated approach to land development and infrastructure servicing that addresses the need for coordinated change at different scales – that is: region, neighbourhood, site and building.

Formed in 2003, the *Green Infrastructure Partnership* is educating stakeholders regarding the benefits of a ‘design with nature’ approach to community planning and land development.

### A ‘Design with Nature’ approach to community design means...



- Develop compact, complete communities
- Increase transportation options
- Reduce the loads on water, waste and energy systems
- Protect and restore urban ‘green’ space
- Strive for a lighter ‘hydrologic footprint’
- Achieve higher levels of stream, wetland and lake protection

In planning for the next 50 years and beyond, the Action Plan vision is for *Communities in Balance with Water*. To this end, an overarching goal is to protect and/or restore the natural environment by improving the built environment. This is the essence of why we ‘design with nature’.

Looking ahead, implementation of green infrastructure by local governments will be voluntary – involving a range of social and economic considerations – but once the decision is made to embrace ‘green infrastructure’, implementation will need clearly defined standards and regulatory models.

**Integrated Work Plans:** The Green Infrastructure Partnership organized Consultation Workshops in both 2004 and 2005. The latter was conducted under the work plan of *Convening for Action in British Columbia*, another element of the Water Sustainability Action Plan. The workshop resulted in development of a multi-pronged outreach and continuing education program (OCEP):

### The Green Infrastructure Partnership is ‘turning ideas into action’ on-the-ground !

Outreach & Continuing Education Program (OCEP)				
Water Bucket Website	Project Tours	Communication Guide for Elected Officials	Guide to Green Infrastructure Standards	Water Balance Model
Speaker Series	Workshop Roadshow	Communication Guide for Senior Managers	Green Infrastructure Standards	Streamlined Environmental Approvals Protocol

Over the past year, and in collaboration with the Water Sustainability Committee, the Green Infrastructure Partnership has been systematically implementing the OCEP elements.

### Change on-the-ground is being advanced through partnerships:



- Green Infrastructure Partnership
- Convening for Action in British Columbia
- Water Bucket Website Partnership
- Water Balance Model Partnership



## SECTION 2

# Convening for Action in Greater Vancouver

## 2.1 Background

In Greater Vancouver, two events held in May 2005 created the momentum for a *Convening for Action in Greater Vancouver* pilot program.

- **REAC Consultation Workshop:** The Green Infrastructure Partnership sponsored a workshop in collaboration with the Regional Engineers Advisory Committee (REAC). The City of Surrey hosted this event. The lead partner for workshop organization was the BCWWA Water Sustainability Committee.

The exchange of information underscored just how much innovation is taking place on-the-ground throughout the region. The report resulting from the workshop is titled *The Green Infrastructure Partnership: Convening for Action in British Columbia*.

- **Rainwater Harvesting Series:** Workshops held in Vancouver and Victoria were part of a series of cross-Canada events sponsored by Canada Mortgage & Housing Corporation. The lead partner for workshop organization and documentation of outcomes was the BCWWA Water Sustainability Committee.



Because rainwater harvesting is a potential 'new' source of water supply, the unifying theme was 'thinking outside the pipe' and the focus was on "when, not if" this will happen. The registration response established that there is an appetite for new approaches; and the local case studies demonstrated that substantial progress is already being made.

### Key Message: Built and Natural Environments are Connected



### At the 2002 BCWWA Conference, we foreshadowed the future....

"Looking ahead, there will be increased emphasis on an integrated approach to managing the Urban Water Cycle because of the 'logical links' between water conservation and....

- Drought Management
- Drinking Water - "from Source to Tap!"
- "Rainwater Harvesting" - a new source



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## 2.2 Celebrating Green Infrastructure

The reason for convening the 2005 REAC Workshop was to solicit the participation of willing municipalities in developing green infrastructure content for policy and technical communication guides that would be written from the perspective of elected officials and senior managers, respectively.

**Key Messages:** At the Workshop, it became clear that pilot projects are scattered around the region, but there is no overall vision for what each community wants its municipality to look like. Other key messages are distilled below:

- **Role of Champions:** The rate of progress in changing standard practices generally depends on the willingness of individual champions to push the envelope in applying new approaches.
- **Availability of Resources:** Even where there is a willingness on the part of a local government to deliver changes in policies and practices, competing demands for essential services limit the time that is left over for municipal staff to champion green infrastructure.
- **Experience:** Because green infrastructure is currently viewed by local governments as non-essential, new approaches are needed to share, adapt and leverage experience among practitioners - both within and among municipalities.
- **Effective Communication:** Relying solely on written documents is not the way to create the appetite for change; new approaches are needed to inform and educate elected officials and the community at large.

By pooling resources under a regional partnership framework for outreach and continuing education, it was concluded that municipalities can leverage the efforts of their own staffs and develop a common understanding of issues and solutions.

### Outreach and Continuing Education:

Guides by themselves are not sufficient to move green infrastructure *from market-niche to market-share*. Rather, the process to:

- create,
- promote and
- implement

a consistent regional vision for ‘designing with nature’ depends on having an outreach and continuing education program that reaches a range of target audiences and builds capacity.

**Celebrating Green Infrastructure: Showcasing Innovation Series** is an amalgam of two OCEP elements identified by REAC Workshop participants as rating a high priority for early implementation, namely:

- **Project Tours:** To enable sharing and cross-fertilizing of ‘how to do it’ case study experience, organize regional field trips.
- **Workshop Roadshow:** To ensure consistent messaging and build capacity within the member municipalities, pool municipal resources to conduct training workshops.

Outreach & Continuing Education Program (OCEP)				
Water Bucket Website	Celebrating Green Infrastructure: Showcasing Innovation Series	Communication Guide for Elected Officials	Guide to Green Infrastructure Standards	Water Balance Model
Speaker Series		Communication Guide for Senior Managers	Green Infrastructure Standards	Streamlined Environmental Approvals Protocol



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**Showcasing Innovation Series:** The goal of the Showcasing Innovation Series is to build regional capacity through sharing of green infrastructure approaches, experiences and lessons learned as an outcome of 'designing with nature'. The series is a building block process --- each time the objective is to raise the bar when celebrating successes in Greater Vancouver municipalities. The program was launched in May 2006.



The Showcasing Innovation Series is organized as a workshop in the morning followed by field tour in the afternoon. The series is structured

this way to create opportunities for practitioners to network and share "how to do it" experiences on the ground. The host municipalities set the scene for the field tour by providing comprehensive and in-depth presentations. The program is designed for engineering, planning, land development, operations, and environmental departments in Greater Vancouver municipalities.

According to **Paul Ham**, Chair of the Green Infrastructure Partnership, "When we talk to practitioners in local government, it doesn't matter what the region, the message is the same...they tell us that they are too busy to communicate with their colleagues in neighbouring municipalities. Yet the irony is that there is much to learn by sharing information with each other. At the end of the day, it seems that it takes a third party to bring people together. Our intention is that the Greater Vancouver pilot will provide the inspiration for similar Showcasing Innovation Series on Vancouver Island and in the Interior."



**The first in the series – Showcasing Innovation in North Vancouver** – successfully used a lane, an arterial highway and the Maplewood community as real-life case studies that informed



participants about the benefits of innovation. For the lane example, selection of porous pavement to infiltrate rainwater runoff was an outcome of an inter-departmental design charrette where the Water Balance Model was a key decision tool.

**The second in the series – Showcasing Innovation in Surrey** – was held in June 2006 and focused on what the City of Surrey believes it can systematically accomplish on-the-ground, at a watershed scale, now and over the next 50 years by building on experience gained from the East Clayton Sustainable Community.



**The third in the series – Showcasing Innovation in Vancouver and at the University of British Columbia** – was held in September 2006 and featured eco-friendly roadways that reflect a 'design with nature' approach to integrating rainwater runoff management and transportation design.





# Celebrating Green Infrastructure – Showcasing Innovation Series Convening for Action in the Greater Vancouver Region

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## 2.3 Acknowledgements

The Green Infrastructure Partnership gratefully acknowledges the financial support provided by SILG, and the significant contributions made by the following organizations and individuals in hosting and ensuring the success of the 2006 Showcasing Innovation Series:

### **Stormwater Interagency Liaison Group:**

- Tony Barber (City of North Van), SILG Chair
- Mark Wellman (GVRD), SILG Coordinator

### **District of North Vancouver:**

- Gavin Joyce, Major Capital Project Engineer
- Richard Boase, Natural Parkland Operations and Environmental Officer
- Ken Bennett, Section Manager Environment & Sustainability
- Doug Allan, Development Planner

### **City of Surrey:**

- Paul Ham, General Manager, Engineering
- Remi Dubé, Drainage Planning Manager
- David Hislop, Project Engineer
- Judy McLeod, Manager, Long Range Planning and Policy Development

### **McElhanney Consulting Services Ltd**

- Jim Dumont, Senior Hydrotechnical Engineer

### **Translink:**

- Michael Sauvé, Project Manager

### **City of Vancouver:**

- David Desrochers, Manager, Sewers Design
- Steve McTaggart, Assistant Sewers & Drainage Engineer
- Joy Foo, Equipment Services Branch
- Thomas Anderson, Sewer Design Branch

### **University of British Columbia:**

- Edward Lee, HSE Advisor (EnvironmentO)
- David Grigg, Associate Director, Campus & Community Planning

## 2.4 Registration for 2006 Showcasing Innovation Series

As the word of the Showcasing Innovation Series spread throughout the region, the registration totals increased accordingly:

- District of North Vancouver: 40
- City of Surrey: 60
- UBC and City of Vancouver: 70

Each event attracted a different audience, in part reflecting geography. Representatives from a dozen municipalities participated in each of the three events. The program for each of the three events is included in Appendix A.

## 2.5 Continuing the Showcasing Innovation Series in 2007

Based on the success of the 2006 program as a networking and information-transfer opportunity, a number of municipalities have expressed interest in hosting Showcasing Innovation events in 2007. Once funding is confirmed by SILG for continuation of the program in 2007, then firm commitments can be obtained from the interested municipalities.

**Meeting with SRI Task Force:** On October 11<sup>th</sup> 2006, the Green Infrastructure Partnership met with the Sustainable Region Initiative Task Force, a committee of mayors chaired by Mayor Lois Jackson of Delta, to report out on the success of the Showcasing Innovation Series and seek support for program expansion to include elected officials. A copy of the presentation that provided background for the discussion is included as Appendix B. The meeting was facilitated by Mayor Pam Goldsmith Jones of West Vancouver.



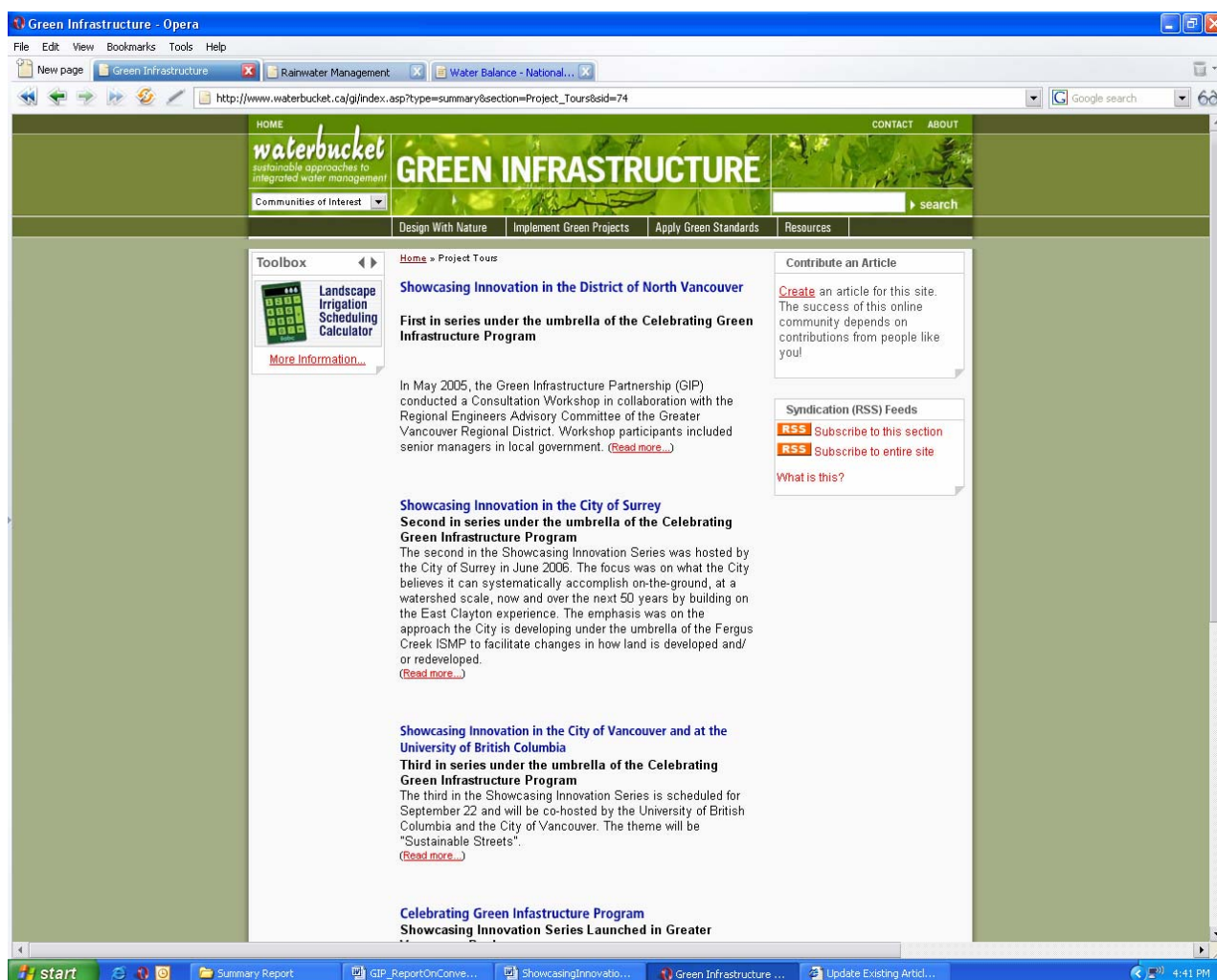
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## SECTION 3

# Green Infrastructure Community-of-Interest

## 3.1 WaterBucket Website

The WaterBucket Website: [www.waterbucket.ca](http://www.waterbucket.ca) is the recognized 'water portal' for British Columbia, serves as the communication vehicle for each element of the Water Sustainability Action Plan, including the Green Infrastructure Partnership. For access to stories that elaborate on the Showcasing Innovation Series, click on this link: [www.greeninfrastructure.ca](http://www.greeninfrastructure.ca)





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## 3.2 Web Stories

Web links for the stories that are posted to the Green Infrastructure Community-of-Interest on the WaterBucket are listed below:

- **District of North Vancouver:**  
<http://www.waterbucket.ca/gi/index.asp?sid=74&id=26&type=single>
- **City of Surrey Surrey:**  
<http://www.waterbucket.ca/gi/index.asp?sid=74&id=48&type=single>
- **UBC and City of Vancouver:**  
<http://www.waterbucket.ca/gi/index.asp?sid=74&id=45&type=single>

**Complementary Resources:** The web stories provide an overview of each event and a synthesis of the information that was presented. Complete details are provided in the PowerPoint presentations and other resource materials that are downloadable from the website. These will contain any performance and cost data that may have been publicly available at the time of the presentation.



**Appendix A**

**Showcasing Innovation Programs**

District of North Vancouver

City of Surrey

City of Vancouver and the University of British Columbia



## Showcasing Innovation in North Vancouver

<b>Why?</b>	<p>In May 2005, the Green Infrastructure Partnership conducted a Consultation Workshop in collaboration with the Regional Engineers Advisory Committee.</p> <p>The “Celebrating Green Infrastructure Program” is a consultation outcome. The program will create opportunities to network and share “how to do it” experiences on-the-ground.</p>
<b>What?</b>	<p>Showcasing Innovation is a workshop followed by field tour:</p> <p>In the morning, there will be comprehensive and in-depth presentations by District staff. Three projects will be featured:</p> <ul style="list-style-type: none"><li>▪ <b>Pemberton Area Lane</b> – selection of porous pavement to infiltrate rainwater runoff was an outcome of an inter-departmental design charrette where the Water Balance Model was a key decision tool</li><li>▪ <b>Dollarton Highway</b> – completed a decade ago, the highway design integrated a pioneer application of rainwater infiltration</li><li>▪ <b>Maplewood Community</b> – as redevelopment proceeds, the complete and compact residential area will complement an eco-industrial networking area founded on green infrastructure principles &amp; practices</li></ul> <p>In the afternoon, participants will be taken by bus to see how these projects have been implemented.</p>
<b>When?</b>	0830 to 1530 on Friday, May 12 <sup>th</sup>
<b>Where?</b>	North Vancouver District Hall, 355 West Queens
<b>Who?</b>	<p>Representatives of Engineering, Planning, Land Development, Operations, and Environment Departments in Municipalities</p> <p>Due to bus capacity limitations for the field trip portion of the day, attendance is limited to 56 (or on average, 4 representatives per municipality)</p>
<b>How to Register?</b>	<p>Phone the District of North Vancouver <b>604-990-2450</b></p> <p>RSVP by Thursday, May 4<sup>th</sup></p>
<b>More Info?</b>	Go to <a href="http://www.greeninfrastructure.ca">www.greeninfrastructure.ca</a> on the WaterBucket Website



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### Showcasing Innovation in Surrey

Time	Program	Speakers
0830	Meet and greet outside Council Chambers	
PRESENTATIONS		
0900	<b>Context &amp; Overview</b> <ul style="list-style-type: none"><li>▪ Welcome</li><li>▪ Green Infrastructure Partnership: <i>Convening for Action</i></li><li>▪ Sustainability on the Ground: <i>City of Surrey Vision</i></li></ul>	Paul Ham Kim Stephens Paul Ham
0930	<b>East Clayton Sustainable Community: <i>Three Years Later</i></b> <p>This project set the pace regionally by demonstrating how to move from talk to action in implementing smart development principles and practices.</p>	Joint presentations by Engineering & Planning <ul style="list-style-type: none"><li>- Remi Dubé</li><li>- David Hislop</li><li>- Judy Mcleod</li><li>- Jim Dumont</li></ul>
1000	<b>Campbell Heights Industrial Area: <i>Meeting Watershed Objectives</i></b> <p>Through innovative design and landscaping requirements enforced through restrictive covenants, this project is meeting watershed objectives.</p>	
1030	<b>Fergus Watershed: <i>Beyond the Creek</i></b> <p>Building on lessons learned from the East Clayton experience, the City is developing an on-the-ground action plan for watershed protection and restoration over the next 50 years.</p>	
1130	LUNCH	
FIELD TOUR VIA TRANSLINK HYBRID BUS		
1230	Depart from City Hall	
1530	Return to City Hall	



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### Showcasing Innovation in the City of Vancouver and at the University of British Columbia

#### “Greening Local Roadways – Integration of Rainwater Management & Transportation Design”

Time	Program for September 22, 2006	Speakers
0830	Meet & Greet: Michael Smith Laboratories, Room 101, 2125 East Mall	
<b>CONTEXT PRESENTATIONS</b>		
0900	<b>Context &amp; Overview</b> <ul style="list-style-type: none"><li>▪ Welcome</li><li>▪ Green Infrastructure Partnership: <i>Convening for Action</i></li></ul>	Ed Lee, UBC Paul Ham, GIP Kim Stephens, GIP
0915	<b>Crown Street &amp; Country Lanes: Exceeding Expectations!</b> <p>Crown Street, Vancouver's first environmentally sustainable roadway, reflects a 'design with nature' approach to integrating rainwater runoff management and transportation design to achieve multiple objectives on a suburban street. Award-winning <i>Country Lanes</i> are an alternative to traditional asphalt lanes.</p>	David Desrochers, City of Vancouver
1005	<b>Hydrogen Fuel Cell Car: Power to Spare!</b> <p>The Vancouver Fuel Cell Vehicle Program (VFCVP) demonstrates the use of hydrogen and fuel cell technologies as an alternative to gasoline. The purpose of the program is to test the technology in real-world conditions and to show how greenhouse gas emissions can be reduced. This is a 3-year project.</p>	Joy Foo, City of Vancouver
1020	<b>Sustainability Street at UBC: Beyond the Moment</b> <p>Breaking new ground at UBC, the initial phase focuses on revolutionary closed-loop systems - the world's first systems integrating rainwater runoff, wastewater treatment and ground source heating, and a small-scale biodiesel production unit which will transform waste cooking oil into a clean-burning fuel. The project is an educational resource that will evolve over time.</p>	David Grigg University of BC
1100	<b>Field Tour Part One: UBC Campus Walkabout</b>	
1200	<b>LUNCH</b>	
1230	<b>Field Tour Part Two: <i>On the Double-Decker Bus!</i></b> <ol style="list-style-type: none"><li>1. Country Lane at Maple &amp; 5<sup>th</sup> Avenue</li><li>2. Country Lane at Fraser and 27<sup>th</sup> Avenue</li><li>3. Crown Street below Southwest Marine Drive</li><li>4. Hydrogen Fuel Cell Car Fueling Station at UBC</li><li>5. Return to the UBC starting point by 1530 hours</li></ol>	

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**Appendix B**

**Presentation to SRI Task Force**



Greater Vancouver Regional District  
Sustainable Region Initiative Task Force

## Changing the Way We Develop Land: *Design with Nature*

Mayor Pam Goldsmith-Jones and  
the Green Infrastructure Partnership






October 11, 2006



### Green Infrastructure Partnership

The GIP is implementing the  
program that was an outcome of the  
2005 REAC Consultation Workshop

#### Outreach & Continuing Education Program (OCEP)

				
Speaker Series	Celebrating Green Infrastructure: Showcasing Innovation Series	Communication Guide for Elected Officials	Guide to Green Infrastructure Standards	Water Balance Model
		Communication Guide for Senior Managers	Green Infrastructure Standards	Streamlined Environmental Approvals Protocol

Change on-the-ground is being  
advanced through partnerships:



- Green Infrastructure Partnership
- Convening for Action in British Columbia
- Water Bucket Website Partnership
- Water Balance Model Partnership

## The Water Sustainability Action Plan for BC....



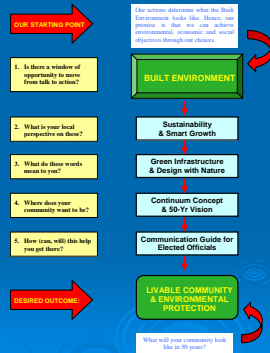
... provides a partnership umbrella for  
an array of *on-the-ground* initiatives that promote  
a 'water-centric' approach to community planning

Three Convening for Action regional  
pilot programs are underway:

- **Greater Vancouver** –  
*Celebrating Green Infrastructure &  
Showcasing Innovation*
- **Vancouver Island** –  
*Framework for Water-Centric  
Land Development Approvals*
- **South Okanagan** –  
*Water for Life & Livelihoods*



This is the template  
for conversations  
with a provincial  
Mayors Focus Group



## How You Can Help Us Help You!

1. Conversations with an expanded Mayors Focus Group
2. Partners in a Communication Guide for Elected Officials
3. Continued funding support through the LWMP Program