

Metro Vancouver Liquid Waste Management Plan Reference Panel

TO: Metro Vancouver Waste Management Committee
CC: Johnny Carline, Chief Administrative Officer, Metro Vancouver
FROM: **LWMP Reference Panel:**
Shaun Carroll Don Mavinic
Garry Cooper Simon Poole
Elaine Golds Susan Rutherford
Ken Hall Kim Stephens, Chair
Mark Hodgson Christianne Wilhelmson, Co-Chair

DATE: June 3, 2009
SUBJECT: **Interim Report on Draft Liquid Waste Management Plan (March 2009)**

Thank you for the opportunity to assist the Waste Management Committee with its deliberations regarding the management of liquid discharges and rainwater in Metro Vancouver. We are pleased to submit the accompanying **Interim Report** for your review and response on June 10.

The Reference Panel has worked closely with Metro Vancouver to establish the approach, and to identify actions and priorities for managing liquid waste and rainwater in the Metro Vancouver region. The process has been inclusive, collaborative and constructive.

We provide a blend of technical, legal, scientific, academic, business, industry and community perspectives and values.

As we have progressively absorbed and synthesized information, our understanding has grown and we have affirmed strategies and refined actions in the Draft Plan. We have also identified opportunities to create linkages among the different areas of action – natural environment, built environment, sewage treatment, financing and implementation – thereby helping to create a stronger plan.

We have provided comprehensive and detailed input; and we have developed a set of nineteen (19) overarching recommendations for your consideration.

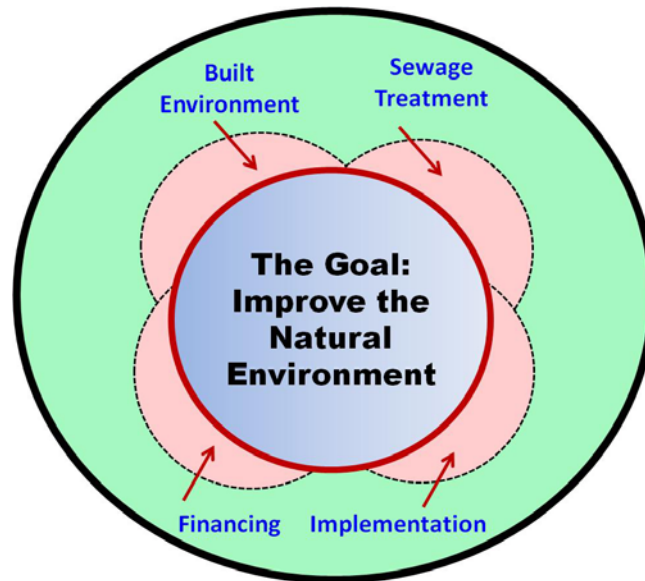
We believe the region is moving in the right direction with the Draft Plan; however, region-wide commitment to implement the proposed strategies is necessary to translate the visionary *Metro Vancouver Sustainability Framework* into tangible actions on the ground.

Again, thank you for the opportunity to play a part in the setting of a direction for our region.

Interim Report

On

A Liquid Resource Management Plan for Metro Vancouver



Prepared for:
Metro Vancouver Waste Management Committee

Prepared by:
The LWMP Reference Panel, A Community Advisory Group

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June 2009

Reference Panel Interim Report on A Liquid Resource Management Plan for Metro Vancouver

1. Scope of Interim Report

Appointed by the Metro Vancouver Regional Board in April 2008 to provide independent review and recommendations on the Liquid Waste Management Plan update, the **Liquid Waste Management Reference Panel** is a community advisory group that brings expert knowledge and relevant experience in liquid waste/resource and rainwater management. (Refer to the accompanying attachment for our bios.)

On May 13, 2009 we presented a Progress Report to the Waste Management Committee; and we laid out a storyline for communicating our findings. The purpose of this **Interim Report** is to elaborate on the storyline elements by presenting our recommendations. Our hope is that these over-arching recommendations will help to strengthen and improve the Plan, and help the region to implement it.

This Interim Report is our synthesis of what we believe really matters, and we trust that it will help the Waste Management Committee make informed decisions and provide leadership. Our **Final Report** will elaborate on feedback provided by the committee concerning the recommendations on June 10; and may also incorporate additional explanatory information about our recommendations.

2. Summary of Findings

Our overall assessment is that the content in the Draft Plan is strong, but more integration of the vision in the actions is still needed so that the goals will in fact be achieved. The Reference Panel has provided Metro Vancouver with specific and detailed feedback for enhancing the eight **Strategies** and thirty-five **Actions**. On the basis of our comprehensive review, we have concluded that:

- The Draft Plan is moving the region in the right direction to achieve the *Sustainable Region Vision*. **However there is a need for stronger commitments in some areas in order to see the Plan realize its vision.**
- The Draft Plan can be characterized as a **transition plan** that, over time, will shift the region from the current practice of managing waste to one that values all its resources.

Get It Right

The strategies and actions in the Plan will have an impact on Metro Vancouver's sustainability for generations to come. Hence, it is important to link those actions to a picture of a desired outcome that will inspire people to strive for constant improvement - *this is what we want our region to look like, and this is how we will get there* – such that:

We will have succeeded when we have healthy urban streams, a healthy Fraser River and a healthy Georgia Strait in which salmon and whales thrive and our children and grand-children can recreate safely.

This desired outcome can be achieved by managing sewage and rainwater as resources, not waste. The Liquid Waste Management Plan is a powerful regulatory tool because it enables Metro Vancouver municipalities to integrate community design with desired outcomes at a regional scale and individual actions at a site scale.

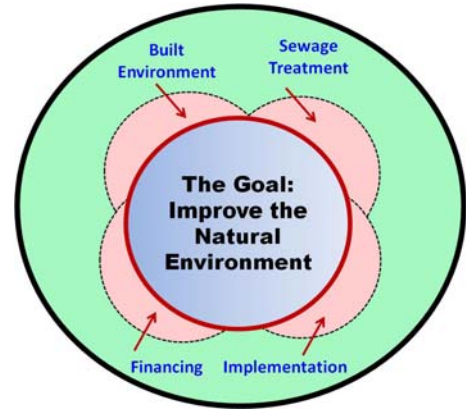
The current LWMP was approved in 2002. Today, there is an even greater focus on making sustainability principles real and addressing the impacts of climate change. **Therefore, this updated Plan is an opportunity for Metro Vancouver to “get it right”, by promoting public and municipal leadership to take advantage of this opportunity.**

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Purposefully Linked Actions; Firm, Forward-Looking Language

Though the Plan refers to the themes set out in the accompanying diagram, the Plan must clearly and explicitly identify the linkages among the different areas of action. To help the region conceptualize what a vision for balance and integration would look like, the Reference Panel has created the accompanying graphic. This shows four elements (or theme areas) which must be integrated if we are to ensure a great Plan.

We see a successful, visionary Plan designed for the future as being one that maximizes the intersection of the four elements – meaning all of these important themes are considered within each Plan action. **We also see visionary communication and education with the public as being key to successful implementation.**



The Plan must avoid using old terminology such as “receiving environment”, “stormwater management” and “insincere-sounding” objectives or actions (e.g. “will consider doing...”) Instead, strengthen the Plan by emphasizing achievable, enforceable actions, and by incorporating references to the new language, such as: nutrient recovery, rainwater management, ‘purple pipe’ (for water reuse), heat recovery, advanced treatment and best available technology.

3. Our Recommendations

The Final Plan must articulate more clearly and consistently the goal of moving beyond regulatory compliance to transitioning Metro Vancouver to an approach where management of liquid discharges and rainwater resources is planned and implemented within a broader, sustainability framework. This framework is one that is designed to achieve the Sustainable Region vision - through resource planning, recovery and management that integrates liquid and solid waste recovery, land use planning, and the built form/infrastructure:

A Healthy Natural Environment

The protection and improvement of the natural environment is the ultimate goal of the Liquid Waste/Resource Management Plan.

1. Call the Plan **A Liquid Resource Management Plan for Metro Vancouver**.

WHY: *To start the paradigm-shift now so that liquid discharges and rainwater are managed as resources, and thereby better protect the natural environment.*

2. Adopt the goal of moving from protect to improve the Natural Environment over time.

WHY: *The health of our waterways and the value of our streams and our oceans to our community are of primary importance not only to our quality of life, but also to our social and economic health. By aiming to improve our environment we are aiming to undo damage already done.*

3. Undertake more extensive monitoring of the long-term cumulative impacts of multiple contaminants in effluents (both from point and non-point sources).

WHY: *Current senior government regulations deal with one contaminant at a time and even though levels may be below some set threshold, the presence of multiple contaminants and their interaction can have impacts on organisms in the long term that are not being considered. The current Cautions, Warnings, Triggers (CWT) process is entirely dependent on individual contaminants.*

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The Built Environment

Decisions we make on the built environment have a direct impact on the health of the natural environment. The following recommendations speak to the need to become more consciously aware of this interconnection in our planning, regulation and decision-making.

4. Resolve the persistent and costly sanitary *Inflow & Infiltration* issue by acting on policy and legal tools that enable municipalities to implement timely and appropriate measures on private property.

WHY: *Private service connections are the unmanaged part of the sewer collection system. Groundwater and rainwater entering from private property contributes 40% of all wastewater collected, transported and treated; and this is an important and significant source of regional system overflows.*

5. Re-focus *Integrated RAINwater/Stormwater Management Plans* on watershed targets and outcomes so that there are clear linkages with the land use planning and development approval process.

WHY: *ISMPs are needed to develop affordable and effective land use strategies that both green the urban landscape and improve watershed health; however, they must be effectively developed and there must be financial and legal tools in place to ensure their implementation in the land development process. Currently, plans that do not integrate land use and drainage planning are therefore resulting in unaffordable infrastructure budget items that become liabilities, without providing offsetting stream health benefits.*

6. Mandate a renamed and 'new SILG' (*Stormwater Interagency Liaison Group*) to spearhead a *regional team approach* to develop policy, legal and technical tools that will enable 'integrated solutions' for rainwater management, green infrastructure and integrated resource recovery.

WHY: *SILG is already a regulatory requirement under the current LWMP. In the early 2000s, SILG was the driving force behind the development of approaches and tools that have made BC a leader in the field of rainwater management and green infrastructure, and it could do the same for the components of this plan..*

7. Implement a consistent region-wide approach to neighbourhood (re)development and building design that integrates rainwater management, green infrastructure and integrated resource recovery.

WHY: *These linkages must be made as early in the planning and development process as possible, so that feasibility is maximized. Municipalities will have to provide developers and property owners with guidance as to how watershed-specific targets established through Integrated RAINwater/Stormwater Management Plans and Integrated Resource Recovery (IRR) targets identified in IRR audits and business casing can be met at the development scale.*

Sewage Treatment

Historically, we have managed sewage treatment by focusing on what comes out of the pipe. This plan needs to focus on better protection of the marine environment and addressing climate change – by using Integrated Resource Recovery (IRR) approaches and technologies to get there. The plan must describe new approaches to sewage management and make stronger linkages to land-use planning at the community and regional levels when planning for sewage treatment facilities.

8. Adopt the following four goals as the guiding framework so that the Plan ensures a flexible and adaptable approach to regional sewage treatment that strives for continuous improvement over time:

- a. Manage liquid discharges as a resource
- b. Minimize discharges
- c. Minimize financial risk
- d. Maximize the quality of the discharges

WHY: *If these goals are met, all else will fall into place because the best treatment will be provided for the region today and in the future. Just meeting the regulatory requirements is not enough. Achieving the vision requires a commitment beyond regulations.*

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9. Commit to replacing primary treatment plants in the North Shore and Vancouver Sewerage Areas no later than 2020.

WHY: *Ensuring the health of Burrard Inlet, the Fraser River and the Georgia Strait is important to our quality of life, and to our social and economic health. Further delay will only results in a failure to achieve the plan's vision.*

10. Conduct business case assessments for *Integrated Resource Recovery* (IRR) before proceeding with the engineering for replacement treatment plants in the North Shore and Vancouver Sewerage Areas, and still meet the 2020 commitment.

WHY: *If the region is to truly achieve the Sustainable Region vision, then the IRR philosophy must be at the heart of the system/facility planning process, not an add-on.*

By placing the assessment of IRR opportunities as the first step of planning new treatment options – including energy, nutrient and other resources – along with more extensive source control planning and implementation, the result will be more effective protection of the environment through advanced sewage treatment (possibly beyond secondary). An additional benefit will be with the identification of significant resources that could lower longer terms costs of managing the system.

11. Strive to achieve Integrated Resource Recovery progress incrementally by committing to business casing (using life cycle accounting approach) through community-scale opportunities such as the **UBC Living Laboratory: Integrated Water and Energy Project**.

WHY: *IRR offers the region many opportunities but not all can be acted upon at once. By looking for opportunities as they arise, the region can more effectively achieve its overall vision.*

12. Provide additional financial incentives, enforcement resources and automated monitoring technologies that will ensure effective source control in the industrial-commercial-institutional sector, and ultimately in the residential sector too.

WHY: *The region can begin to protect the environment by preventing the introduction of endocrine disruptors as well as persistent bioaccumulating contaminants; and reduce sewer system costs by intercepting fats, oils and greases.*

The total cost of allowing substances to become part of the sewage system – treatment, pipe maintenance and replacement, impacts of toxins in the environment – is far greater than investing in effective source control implementation (i.e. save the region more in the long term).

Financing

The Draft Plan identifies the many investments that need to be made in our region (including treatment plants, new pipes, etc.) in general terms, and provides some very high level cost estimates, options for timing and suggestions for municipal, provincial, federal cost sharing. However, **the Draft Plan does not provide a road map for how these significant capital investments will be funded or delivered.**

13. Move from a facility-specific approach to a total system way-of-thinking about financing, constructing, operating and maintaining regional conveyance and treatment infrastructure.

WHY: *In accordance with the approach endorsed by the Sustainable Region Initiative, the Plan needs to explicitly endorse investment decisions on long-term thinking plus broader economic issues; and adhere to “green value” approaches that embed full-cost and life-cycle accounting (i.e. including the need to put a price on the environment and the services it provides).*

14. Increase the amortization period for treatment plant financing from 15 years to 30 years to achieve inter-generation equitability.

WHY: *Financing over a longer period will reduce the annual cost borne by current taxpayers and better reflect the long life of these investments and their long-term environmental benefits.*

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15. Direct that rate-setting will adopt and implement the principles of 'polluter pay' and equity to provide municipalities (and homeowners and businesses) with an incentive to reduce their wet-weather flow contributions to the regional conveyance and treatment system.

WHY: *It is about fairness and equitability; therefore, the region must provide a meaningful incentive/disincentive to the users to take responsibility for fixing their share of the problem.*

16. Develop major capital projects in a manner that demonstrates value for money, including protecting ratepayers / taxpayers from the risks associated with these major projects.

WHY: *Affordability and risk management.*

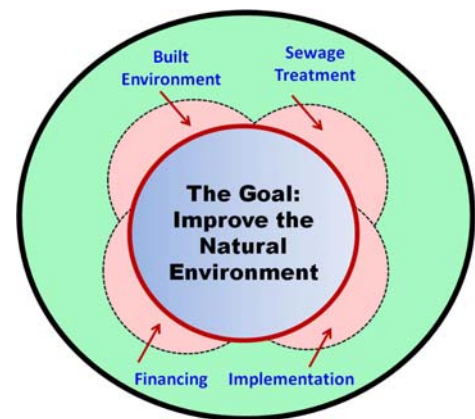
Implementation

No matter how good the Plan is, for its vision and goals to be achieved it needs to be accompanied by strong political leadership and commitment (political, financial, staff and public support).

17. Establish a *Stewarding Committee* to steward the Plan, and ensure ongoing action implementation occurs and stays true to the vision.

WHY: *There is a need for fresh, objective eyes bolstered by a strong political mandate to keep asking questions, prod Metro Vancouver and member municipalities toward the vision, and assist with the paradigm-shift over time. The Stewarding Committee would report directly to the Waste Management Committee, and would be outside the existing agency and committee structure currently used by Metro Vancouver.*

The Stewarding Committee would have broad representation (e.g. community, academia, business), supported by specific government representatives. The first action of the Stewarding Committee might be to make presentations about the Plan to all member municipalities – on the need for municipal support and action, to make the transition to the SRI Vision.



18. Develop and implement a proactive and innovative education and communication plan for the public and elected representatives.

WHY: *It is necessary to make the linkage between actions and end vision and goals, and to gain political support for achieving and paying for visionary goals – for example, explain the link between private laterals, sewage overflows and healthy fish/clean Fraser River.*

19. Develop and implement an inter-departmental and inter-governmental continuing education program for Metro Vancouver municipalities that would align local actions with provincial and regional goals, and would result in consistent expectations for region-wide implementation of Plan elements.

WHY: *Experience has shown that success in implementation is maximized when you achieve broad understanding and alignment among all relevant stakeholders. A capacity-building program could be defined by this theme: How we can simultaneously work together as staff within a municipality and as a region AND externally with the stewardship sector, developers and other private sector players, to ensure we implement sustainable approaches to development.*

Metro Vancouver appoints Reference Panel to provide input to Liquid Waste Management Plan

APRIL 18, 2008: In January 2008, Metro Vancouver drafted discussion documents for updating its Solid Waste and Liquid Waste Management Plans. In April 2008, the Metro Vancouver Board appointed the Metro Vancouver Solid and Liquid Waste Management Reference Panels. According to **Board Chair Lois Jackson**, the Reference Panels will provide input on the discussion documents and on the subsequent Draft Plans.



Reference Panel Concept

The Reference Panels will report directly to the Metro Vancouver Waste Management Committee during the consultation process. "The Reference Panels will provide comments and advice on the strategies for updating each plan," explained **Councillor Marvin Hunt** (City of Surrey), Chair of the Waste Management Committee. "Each panel is comprised of community members who bring a variety of perspectives to solid and liquid waste issues, including technical experts, solid and liquid waste management specialists, business representatives and citizens with an interest in solid and liquid waste topics."



According to **Mayor Pam Goldsmith-Jones** (West Vancouver), Vice-Chair of the Waste Management



Committee, the Reference Panel concept is modeled on the Working Group approach which has been successfully implemented in her municipality. The essence of the West

Vancouver experience is that the community benefits when there is collaboration and a true partnership between local government staff and community members in a working group. A critical success factor is the creation of a collegial and cooperative atmosphere.

Members of LWMP Reference Panel

The ten members of the Liquid Waste Management Plan (LWMP) Reference Panel are listed as follows:

- Susan Rutherford
- Christianne Wilhelmson
- Elaine Golds
- Ken Hall
- Don Mavinic
- Kim Stephens
- Shaun Carroll
- Garry Cooper
- Mark Hodgson
- Simon Poole

The three categories of representation are: residents or representatives of non-governmental organizations, technical experts, and practitioners.

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Representatives of non-governmental organizations:

Susan Rutherford, *Staff Counsel, West Coast Environmental Law (WCEL)*: Susan works on WCEL's Livable and Sustainable Communities program where she specializes in local government bylaws and policy tools that support green infrastructure in communities. She is also a member of the Green Infrastructure Partnership Steering Committee. Susan is the author of the *Green Infrastructure Guide*.



Christianne Wilhelmson, *Managing Director Georgia Strait Alliance*: Christianne has worked for the Georgia Strait Alliance for over six years and is currently their Managing Director. She is an Ontario transplant who came to BC in 1995 to pursue a MSc in ecology at UBC and stayed on after graduation. She has worked as a lab technician and freelance science writer. She leads GSA's government and media relations efforts as well as coordinating its Clean Air and Water program, with a particular focus on bring innovative and advance sewage treatment to communities around the Georgia Basin region.



Elaine Golds, *Vice President, Burke Mountain Naturalists*: Elaine has conducted research in the field of cellular immunology and has previously provided input on both the Liquid Waste Management Plan, and the Drinking Water Management Plan. She is a former member of Metro Vancouver's Regional Water Advisory Committee. Elaine is a volunteer with the Noons Creek Fish Hatchery, a member of the Port Moody Ecological Society, Vice-President of the Burke Mountain Naturalists, and President of the Colony Farm Park Association.

Technical Experts:

Ken Hall, *Professor Emeritus, Westwater Research Centre, University of British Columbia (UBC)*: In addition to his work at UBC, Ken is also an active member of Metro Vancouver's Environmental Monitoring Committee. Ken has helped to organize and co-ordinate projects on water pollution research and water resources management throughout the Metro Vancouver area.



Don Mavinic, *Professor, Faculty of Applied Science, University of British Columbia*: Don is a researcher and professor of civil engineering at UBC, and an editor on several peer-reviewed journals, including *Environmental Technology*, the *Canadian Journal of Civil Engineering*, and the *Journal of Environmental Engineering and Science*.



Kim Stephens, *Program Coordinator, Water Sustainability Action Plan for British Columbia*: A principal author of [Stormwater Planning: A Guidebook for British Columbia](#), Kim is an engineer-planner who specializes in public policy and its implementation. In his current role, he is the secretariat for a half-dozen partnerships (including the Green Infrastructure Partnership) that are developing tools and providing continuing education for practitioners under the umbrella of the Action Plan.



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Practitioners:

Shaun Carroll, *Executive Director, North American Society for Trenchless Technology – BC Chapter*: Shaun is an industry representative for a not-for-profit organization whose mission includes the promotion, education, training, research, and development of trenchless technologies for rehabilitation of linear infrastructure, such as sanitary sewers.

Garry Cooper, *General Manager, Organic Resource Management (BC) Inc.* OMI is Canada's largest provider of vacuum truck services for the collection, treatment and disposal of organic and other non-hazardous liquid waste for commercial, industrial, institutional and residential customers in Ontario, Quebec, and British Columbia. OMI is moving towards the use of Anaerobic Digesters as a way of recycling liquid waste into biogas renewable energy and fertilizer.

Mark Hodgson, *Chair, Infrastructure Delivery and Finance Committee, British Columbia Water and Waste Association (BCWWA)*: In addition to his work with BCWWA, Mark is a partner at Deloitte & Touche LLP, Vancouver, BC. He leads the Infrastructure Advisory and Project Finance group in Western Canada and has many years of experience with developing and executing public-private partnership procurements and transactions.



Simon Poole, *Plant Manager, Saputo Foods*: Simon is the Plant Manager for the fluid milk production plant (Dairyland Fluid Division Ltd) of Saputo Foods Ltd. in Burnaby, one of the permitted industries under Metro Vancouver's Liquid Waste Bylaw.

Posted July 2008

Updated June 2009