



**SUBJECT** MEMORANDUM OF UNDERSTANDING BETWEEN UBC AND METRO VANCOUVER

**MEETING DATE** DECEMBER 3, 2015

Forwarded to the Board of Governors on the Recommendation of the President

**APPROVED FOR  
SUBMISSION**

Martha C. Piper, Interim President and Vice-Chancellor

**DECISION  
REQUESTED** IT IS HEREBY REQUESTED that *the UBC Board of Governors endorse the attached Memorandum of Understanding between UBC and Metro Vancouver.*

**Report Date** October 20, 2015

**Presented By** Barbara Miles, Interim Vice-President Communications & Community Partnership  
Michael White, Associate Vice-President Campus + Community Planning  
Adriaan de Jager, Executive Director, Government & Corporate Relations

**EXECUTIVE SUMMARY**

This report seeks Board of Governors endorsement of a Memorandum of Understanding (MOU) between UBC and Metro Vancouver. A parallel report is being presented by the Metro Vancouver CAO to the Metro Vancouver Board for endorsement. Execution of the MOU is currently planned for fall 2015, through an official signing ceremony between the UBC President and Metro Vancouver CAO.

Proposed MOU and a summary of Metro Vancouver / UBC collaborations and joint initiatives are attached.

The MOU is an effort to enable greater collaboration between UBC and Metro Vancouver given that relations between the parties have been sporadic and informal in recent years. The MOU frames and supports the existing collaborations and perhaps more importantly, provides a basis for future collaborations in a number of areas of opportunity that connect our research mission to the prosperity to the greater region. Areas of focus include:

- Research, Learning and Innovation;
- Operations and Infrastructure;
- Regional Prosperity.

The MOU respects the current governance arrangement of the UBC Vancouver campus.

**INSTITUTIONAL STRATEGIC PRIORITIES SUPPORTED**

- Learning     
  Research     
  Innovation     
  Engagement     
  International  
 (Internal / External)
- or  Operational

**DESCRIPTION & BACKGROUND**  
**RATIONALE**

Subsequent to the removal of UBC from the land use planning authority of Metro Vancouver (then GVRD) in 2010, relations between the two parties have been sporadic and informal. Collaboration has mostly focused in areas of applied research between faculties and infrastructure units of Metro Vancouver, occasional communication and engagement on operational matters (*e.g.*, stormwater management) and limited engagement on strategic initiatives and partnerships of regional importance (*e.g.* UBC's submission of a Regional Context Statement as per MEVA). This range of collaborations and joint initiatives are attached to this report as Appendix B.

Over the past number of years UBC has entered into a number of non-legally binding MOUs with the City of Vancouver, BC Hydro and the UNA. These MOUs have laid the groundwork for parties to work collaboratively with each other on topics and issues of mutual interest. These MOUs have successfully guided more effective and efficient collaborations.

In the winter of 2014, a series of discussions between senior executives from both organizations revealed a strong interest in pursuing a more formal mechanism for engagement, to frame and support the existing collaborations and perhaps more importantly, to provide a basis for future collaborations in a number of areas of opportunity that connect our research mission to the prosperity to the greater region. In April 2015, both parties began laying out a process for drafting an MOU and convened an Executive Task Group with representatives from both organizations.

The proposed MOU would be a non-legally binding document that will provide a framework for collaboration between the two parties.

**DISCUSSION**

UBC and Metro Vancouver recognize the importance of developing a more formal platform for facilitating strategic collaboration in the areas of Research, Learning and Innovation, Operations and Infrastructure, and Regional Prosperity. This comes at a time when both parties are aspiring to a greater presence and "connection" throughout the region, each with enormous resources and opportunity to share, and greater potential to realize these aspirations through collaboration in areas of complementary need/expertise. It also reflects both organizations' deep concern for the future health and prosperity of the region, and represents a significant advancement, through strategic partnership, towards a more sustainable region.

It should be noted that the discussions and resultant draft MOU respects the current governance arrangement of the UBC-Point Grey campus.

The MOU identifies three core areas of activities for collaboration which include:

1. Research, Learning and Innovation

Building on a strong history of collaboration, especially in areas of applied research, both parties commit to identifying new opportunities to share knowledge and research findings to advance regional and global sustainability challenges that range from integrated resource recovery, new techniques in wastewater treatment, infrastructure resiliency, climate action planning, to water conservation.

The MOU will also explore opportunities for focused learning through established programs such as SEEDS (Social Ecological Economic Development Studies) as well as expanding the USI Sustainability Scholars program to include Metro Vancouver. The Scholars Program provides UBC Graduate Students the opportunity to work on a funded sustainability internship project. This model is intended to build on the success of the Greenest City Scholars program with the City of Vancouver and helps to advance the mutual interests of both parties.

The VP Research Office is coordinating early efforts to document existing connection points and to facilitate discussions for connecting Metro Vancouver infrastructure needs to current or future research through various faculties. This includes a successful workshop hosted by UBC on May 4th, 2015 between Faculty of Applied Science and Metro Vancouver representatives of Regional and Utility Services. UBC has also executed a licence agreement with Metro Vancouver regarding the Annacis Island Research Centre.

2. Operations and Infrastructure

Metro Vancouver provides important regional services to UBC's Vancouver campus including regional parks, treated drinking water and treatment of liquid and solid waste, air quality management and emergency management planning. As part of the MOU both parties commit to proactively identifying operational and infrastructure solutions which addresses the needs and interests of both parties with the understanding that some operational and infrastructure issues are best addressed collaboratively. Examples include the spiral drain (a vertical cork-screw pipe that diverts storm water away from the cliffs through a vertical shaft), and other regional infrastructure services such as potable water.

3. Regional Prosperity

Under this topic, both parties commit to address a variety of challenges ranging from efficient and sustainable movement of people and goods, innovation in the regional economy, workforce challenges, public health, transformation to clean and renewable energies as well as energy efficiency in the built environment. One of the first proposed initiatives will be a regional discussion on what is traditionally known as economic development, but now framed as regional prosperity. Metro Vancouver will engage UBC on the development of a white paper on the topic this fall.

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Implementation

Both parties, through the MOU, will develop and implement simple and effective protocols to facilitate and govern their collaborative efforts. The on-going stewardship of the MOU will be guided through the establishment of a Strategic Partnership Steering Committee which will be co-chaired by UBC’s Associate Vice President of Campus and Community Planning and Metro Vancouver’s General Manager of Planning, Policy and Environment. The Steering Committee will meet quarterly, or as required, to discuss issues or opportunities to advance initiatives and topics outlined in the ‘Current Joint Initiatives List’ included within the MOU. The University will also continue to work with the Electoral Area “A” Director on formal matters related to the jurisdictional responsibilities of Metro Vancouver while keeping her apprised of the implementation of the MOU.

To ensure ongoing success, the MOU requires the support and active leadership of Metro Vancouver’s Chief Administrative Officer and UBC’s President – occasional meetings will be scheduled for both leaders to check in and discuss opportunities for future collaboration.

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<b>BENEFITS</b> Learning, Research, Financial, Sustainability & Reputational	<p><b>Learning and Research:</b> providing a more coordinated process for linking up and growing research and learning opportunities with the operational needs of Metro Vancouver.</p> <p><b>Financial:</b> collaboration on a number of operational issues related to infrastructure planning and management holds the potential for increased savings and efficiencies for the University.</p> <p><b>Sustainability:</b> the MOU provides a framework to engage more intensely on issues affecting the health and prosperity of the region, and represents a significant advancement, through strategic partnership, towards a more sustainable region.</p> <p><b>Reputational:</b> after many years of ad hoc arrangements and interaction, the MOU demonstrates that UBC values engagement to further the research and learning mission and at the same time addresses regional scale issues through collaboration.</p>
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<b>RISKS</b> Financial, Operational & Reputational	<p>The overall risk of affecting UBC’s governance arrangement through the MOU or associated processes has been addressed through a review by UBC’s Legal Counsel and clear wording to address any such risk.</p>
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<b>COSTS</b> Capital & Lifecycle Operating	<p>There are no costs associated with the signing of the MOU. Any costs associated with capital or operating expenditures under the auspices of the MOU will be reported individually and approved through the standard Executive or Board approval processes.</p>
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**FINANCIAL** Communications and media relations associated with the signing of the MOU will  
Funding Sources, be addressed within existing resources.  
Impact on Liquidity

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**SCHEDULE** Metro Vancouver will seek endorsement through their Intergovernment and  
Implementation Finance Committee in November 2015. After endorsements have been received,  
Timeline UBC and Metro Vancouver will work collaboratively to implement a joint  
communications strategy through the fall of 2015. An official signing ceremony  
between the UBC President and Metro Vancouver CAO is envisioned to take  
place shortly after endorsements are received.

A Steering Committee will be established to oversee the on-going implementation and collaboration between the Parties which will be co-chaired by the AVP for Campus and Community Planning and Metro Vancouver's General Manager of Planning, Policy and Environment. The Steering Committee will endeavour to meet quarterly (or as required) to help facilitate the implementation of the MOU and to identify opportunities to make collaboration stronger.

At least once per year, the Steering Committee will request and review progress reports on the initiatives in the Current Joint Initiatives List and provide direction on future projects for collaboration.

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**CONSULTATION** As part of the development of the MOU, UBC convened an internal Steering  
Relevant Units, Committee with representation from key units including Campus and  
Internal & External Community Planning, Infrastructure Development, VP Research and  
Constituencies International, Office of the President, Government and Corporate Relations, USI,  
and Legal Counsel.

Metro Vancouver also convened an internal process to help in the development and review of the MOU.

A Joint MOU Task Group, with key representation from both parties, was responsible for drafting the MOU and facilitating input across the two organizations.

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**STRATEGIC COLLABORATION  
MEMORANDUM OF UNDERSTANDING**

This Memorandum of Understanding entered into the \_\_\_ day of \_\_\_\_\_, 2015

**BETWEEN:**

Greater Vancouver Regional District, Greater Vancouver Sewerage and Drainage District,  
Greater Vancouver Water District and Metro Vancouver Housing Corporation  
4330 Kingsway  
Burnaby, BC, V5H 4G8  
[www.metrovancouver.org](http://www.metrovancouver.org)

(collectively known as “**Metro Vancouver**”)

**AND:**

The University of British Columbia  
2329 West Mall  
Vancouver, BC, V6T 1Z4  
[www.ubc.ca](http://www.ubc.ca)

(“**UBC**”)

**WHEREAS:**

- A. Metro Vancouver is a federation of 21 municipalities, one Electoral Area and one Treaty First Nation committed to the collaborative provision of core services and integrated planning in a manner that promotes livability and sustainability throughout the broader regional community.
- B. The University of British Columbia, whose Point Grey campus is located in Metro Vancouver, is a global centre for research and teaching, committed to innovation, the development of talent, and the application of research in addressing key challenges facing the region and the world.
- C. Metro Vancouver and UBC (the “**Parties**”) recognize the value of collaboration and wish to work closely together in identifying and pursuing opportunities that benefit both parties and contribute to creating a livable, prosperous and sustainable region today and in the future.

THEREFORE the Parties have chosen to enter into this Memorandum of Understanding (**MOU**) to build on their existing working relationship and to collaboratively explore and undertake a variety of joint initiatives.

### **Non-Legally Binding**

1. This MOU is a non-legally binding document that is intended to guide the Parties in their efforts to identify and pursue opportunities for collaboration.
2. Individual joint initiatives that are identified by the Parties pursuant to this MOU will be, as necessary, developed and implemented through separate legal agreements, contracts or other mechanisms.

### **Shared Commitment**

3. Each of the Parties is an autonomous public body with its own statutory authorities, mandate and jurisdiction.
4. The Parties share a commitment to the principles of sustainability and to the belief that the long-term livability, prosperity and sustainability of the region – indeed the entire planet – require approaches to problem-solving that are characterized by innovation, creativity, entrepreneurship and collaboration.
5. The Parties understand that the success of this MOU will be determined by each Party's commitment to the spirit of collaboration and innovation on which this MOU is founded.
  - 5.1. The on-going and active support of Metro Vancouver's Chief Administrative Officer/Commissioner and UBC's President is considered essential to the success of the joint effort.

### **Effect of this MOU**

6. This MOU provides a framework within which the Parties will identify and consider undertaking joint initiatives by the Parties; it does not obligate the Parties to undertake any particular initiative, or restrict either Party from engaging in separate initiatives or agreements that might be related to the scope of this MOU.
7. Each of the Parties expressly disclaims any intention to create through this MOU a partnership, joint venture, or agency relationship and agrees that nothing in this MOU or in any act of the Parties constitutes or may be deemed to constitute a partnership, joint venture or principal-agent relationship.

- 7.1. Neither Party will represent or hold itself out to be an agent of the other Party nor will either Party have any authority to act for or to assume any obligation or responsibilities on behalf of the other Party.

### **Scope of Activities**

8. The Parties have identified three areas that present opportunities for collaboration: Research, Learning and Innovation, Operations, and Regional Prosperity.

#### **Research, Learning and Innovation**

- 8.1. UBC and Metro Vancouver have a strong history of collaboration on individual research projects and initiatives.
- 8.2. Building on this history, the Parties will endeavour to identify new opportunities to share knowledge and research findings, jointly undertake research to further the Parties' individual and shared goals, and collaborate in the development of approaches designed to address important regional and global sustainability challenges.
- 8.3. Opportunities to be identified may relate to a broad range of topics, including but not limited to:
  - integrated resource recovery,
  - new techniques in wastewater treatment,
  - low impact development,
  - valuation of ecosystem services,
  - infrastructure resilience,
  - transition to clean or renewable energy sources,
  - climate change adaptation,
  - water conservation,
  - beneficial use of compost and biosolids,
  - source controls to improve water quality in receiving waters, and
  - scenario development and modelling.
- 8.4. The Parties will regularly convene discussion forums, workshops and other events for Metro Vancouver and UBC staff as well as UBC researchers to exchange information on best practices, innovations, technologies and approaches, and to identify opportunities for collaboration.
- 8.5. The Parties will seek ways to expand work/study opportunities for UBC students with Metro Vancouver, including opportunities through existing structures such as UBC's Cooperative Education and the Social, Ecological, Economic and Development (SEED) programs.



- 8.6. The Parties will endeavour to develop opportunities for targeted placement of faculty, staff and students through various programs, including those that leverage funding from external partners including the federal and provincial governments.

### **Operations**

- 8.7. With respect to its Point Grey campus, UBC delivers or arranges for the delivery of local government and infrastructure services and is responsible for local planning and development services consistent with UBC's Land Use Plan, pursuant to Part 10 of the *Municipalities Enabling and Validating Act (No. 3)*.
- 8.8. Metro Vancouver provides important regional services to UBC's Point Grey campus, including regional parks (Pacific Spirit Regional Park surrounds the University), air quality management, treated drinking water supply through the University Endowment Lands, management of regional liquid and solid waste services, some storm water management and an emergency management plan for Electoral Area A (Electoral Area A includes UBC's Point Grey campus).
- 8.9. Metro Vancouver has adopted a regional growth strategy, *Metro 2040: Shaping Our Future*, to guide regional planning and growth management throughout the Metro Vancouver region. (UBC's support for *Metro 2040* is expressed in a regional context statement that forms part of UBC's Land Use Plan).
- 8.10. Through the exercise of their respective authority in their respective jurisdictions, Metro Vancouver and UBC face various operational issues, some of which are best addressed collaboratively.
- 8.11. The Parties will endeavour to proactively identify operational issues on which collaborative action should be considered and develop joint approaches for action.

### **Regional Prosperity**

- 8.12. In its capacity as the governing body for the regional federation, Metro Vancouver has an important role to play in facilitating multi-party discussions and efforts aimed at supporting and promoting the prosperity of the region.
- 8.13. As an influential global centre for Research, Learning and Innovation, and as a large public land holder with clearly articulated development plans guided by its Land Use Plan, UBC's involvement in regional prosperity initiatives is essential.
- 8.14. The Parties will endeavour to collaborate, as part of a broader multi-party initiative, on efforts to address a wide variety of topics related to prosperity including but not limited to:

- the efficient and sustainable movement of people and goods,
- the means for increasing productivity in a service based economy,
- workforce challenges related to changing demographics, closing the skills gaps, and the housing and transportation cost burden in the region,
- climate change mitigation efforts and adaptation strategies,
- land constraints in the region and opportunities for policy innovation,
- barriers to and opportunities for transition to clean and renewable sources,
- opportunities for creating new goods and services as well as patterns of production emerging from global resource constraints and efforts to reduce waste, and
- public health needs as they relate to the responsibilities of Metro Vancouver.

## **Attachment**

9. This MOU has one attachment.

### **Attachment 1 (the “Current Joint Initiatives List”)**

- 9.1. The Current Joint Initiatives List describes the specific initiatives under each area of focus that are on-going or that will be developed starting in year one.
- 9.2. The Current Joint Initiatives List will be the key communication tool for sharing with internal and external stakeholders to promote a better understanding of the range of collaborative initiatives between Metro Vancouver and UBC.

## **Joint Steering Committee**

10. The Parties agree to establish a Strategic Collaboration Joint Steering Committee (the “**Steering Committee**”) to oversee the ongoing collaboration of the Parties as envisioned in this MOU.
- 10.1. The Steering Committee will be co-chaired by UBC’s Associate Vice President for Campus and Community Planning and Metro Vancouver’s General Manager of Planning, Policy and Environment.
- 10.1.1. The two co-chairs will identify and recommend, as necessary, the appointment of members to the Steering Committee in equal numbers from each of Party.
- 10.2. The Steering Committee will endeavour to meet quarterly, or as required, to discuss any concerns related to the implementation of this MOU and to identify opportunities to make the collaboration stronger.
- 10.3. At least once per year the Steering Committee will request and review progress reports on the initiatives in the Current Joint Initiatives List as well as, where possible, on other

joint Metro Vancouver-UBC initiatives that are the subject of separate contracts or agreements.

10.3.1. Thereafter, the Steering Committee will revise the Current Joint Initiatives List to ensure it remains current; and will update the Joint Initiatives Summary.

## **Term**

11. This MOU will remain in effect unless terminated by either of the Parties by providing six (6) months notice in writing to the other Party.
12. Termination of this MOU does not cancel any agreement signed by the Parties in respect of a specific initiative and for greater certainty, cancellation of a separate contract or agreement must be pursued in accordance with the terms of such contract or agreement.
  - 12.1. For greater certainty, cancellation of a separate contract or agreement must be pursued in accordance with the terms of such contract or agreement.

## **General**

13. Each Party is responsible for funding its own participation in the Steering Committee and in any related body or activity that is established or undertaken to assist in the implementation of the Strategic Collaboration and this MOU.
14. The Parties understand and expressly agree that the content of this MOU, unless otherwise stated, is not confidential and may be distributed to and shared with others.
15. The Parties agree to work together to develop public announcements and other messaging related to this MOU as well as specific joint initiatives that may be pursued by the Parties.
  - 15.1. The Parties will endeavour to advise one another of planned public speaking events regarding the collaborative relationship and/or joint initiatives pursuant to this MOU.
16. This MOU does not grant either Party the right to use any of the other Party's intellectual property, including without limitation logos or trademarks.
17. The Parties will endeavour to develop and implement simple, efficient and consistent protocols to facilitate and govern their collaborative efforts pursuant to this MOU.
18. If issues arise concerning the interpretation or application of this MOU, the Parties shall, through discussions, resolve the matters to their mutual satisfaction.
19. Each Party acknowledges and respects any limitations and obligations the other Party may have related to:
  - the *Freedom of Information and Protection of Privacy Act*;

- any other applicable laws; and
- internal policies.

20. The Parties will endeavour to formally review this MOU every ten years, or more frequently as may be reasonably requested by either Party.

IN WITNESS WHEREOF the Parties have hereunto affixed their signatures

DRAFT

## ATTACHMENT 1

### CURRENT JOINT INITIATIVES LIST

Initiative	Lead Department and Faculty	Status
<b>Research, Learning and Innovation</b>		
<ul style="list-style-type: none"> <li>Anaerobic/aerobic dual digestion – gasification of sewage sludge</li> </ul>	MV Liquid Waste Services; UBC Bioreactor Technology Group and UBC Okanagan School of Engineering	Pending
<ul style="list-style-type: none"> <li>Phosphorus Recovery Demonstration Unit at Annacis Research Centre.</li> </ul>	MV Liquid Waste Services; UBC Department of Civil Engineering	Pending
<ul style="list-style-type: none"> <li>Livable Region Students and Scholars</li> </ul>	MV Planning, Policy and Environment; UBC University Sustainability Initiative	Pending
<b>Operations</b>		
<ul style="list-style-type: none"> <li>Spiral Drain</li> </ul>	MV Liquid Waste Services; UBC Campus + Community Planning	Pending
<ul style="list-style-type: none"> <li>Point Grey Cliffs Stabilization Study</li> </ul>	MV Regional Parks; UBC Campus + Community Planning	Started August 2015
<ul style="list-style-type: none"> <li>Regional Service Provision</li> </ul>	GVWD, GVSDD and GVRD; UBC Campus + Community Planning and UBC Energy and Water Services	Pending
<b>Regional Prosperity</b>		
<ul style="list-style-type: none"> <li>Regional Prosperity Initiative</li> </ul>	MV Planning, Policy and Environment; UBC Campus + Community Planning	Pending
<ul style="list-style-type: none"> <li>Regional Climate Action Initiatives</li> </ul>	MV Planning, Policy and Environment; UBC Campus + Community Planning	Pending
<ul style="list-style-type: none"> <li>Regional Sustainability Round Table</li> </ul>	MV Planning, Policy and Environment; UBC University Sustainability Initiative	Pending
<ul style="list-style-type: none"> <li>Integration of regional growth management and transportation planning</li> </ul>	MV Planning, Policy and Environment; UBC Campus + Community Planning	Pending

## Metro Vancouver and UBC Collaborations and Joint Initiatives

Sept 10 ,2015

Ref #	Project/Initiative	Description	Metro Vancouver Department or Division	UBC Department or Program	Duration & Status	Other participants or stakeholders	Comments	Type
	<b>Teaching, Learning &amp; Research</b>							
1	Dust extraction systems	Collaborated on dust extraction systems at select parks service yard workshops	Regional Parks	Ed Chessor, P. Eng., CIH, MBA; School of Population and Public Health				applied research - air quality in the workplace
2	Policy research and development for residential wood burning programs	Collaboration to provide analysis of health impacts of exposure to wood smoke, including consultation workshops	Air Quality & Climate Change with Environmental Regulation and Enforcement	Dr. Michael Brauer, UBC School of Population and Public Health;				applied research - air quality
3	Reducing Exposure to Transportation Emissions	Policy development and identification of best management practices to reduce exposure to harmful traffic emissions	Air Quality & Climate Change	UBC School of Population and Public Health; Metro Vancouver (air quality planning staff )		TransLink, BC Ministry of Environment, several municipalities		applied research - air quality
4	Regional Ground Level Ozone Strategy	Contributed to management plan to reduce ground level ozone pollution in Metro Vancouver and FVRD	Air Quality & Climate Change with Environmental Regulation and Enforcement	UBC Department of Earth, Ocean and Atmospheric Sciences; Metro Vancouver (air quality planning staff and regulation and enforcement staff)	Complete	Environment Canada, FVRD, Port Metro Vancouver, BC Ministry of Environment	funded UBC research on historical ground level ozone measurements and trends, to inform development of policy to reduce it	applied research - air quality
5	Community Based Experiential Learning -	Support Community Based Experiential Learning at UBC by mentoring undergrad students through relevant projects with a focus on practical application in real life	Air Quality and Climate Change	In 2015: Biology (4th year) and Civil Engineering (2nd year)	Typical sessions are 4 months in duration	NGOs and other relevant stakeholders involved at times		applied research - air quality and climate change
6	Burns Bog carbon flux research	Quantifying summertime greenhouse gases fluxes from soils in various stages of restoration in the Burns Bog Ecological Conservancy Area	Air Quality and Climate Change, Parks	Andreas Christen, Andrew Black, Mark Johnson, Dan Moore and student/researcher team, Department of Geography	Started: 2014 End: 2015 Status: Completed (but there may be follow-on work)		Orbit link to final report: <a href="http://orbit/orbit/llisapi.dll/open/10593170">http://orbit/orbit/llisapi.dll/open/10593170</a>	applied research - climate change
7	Improving estimates of transportation VKT and GHGs in the region	Examining data and developing an improved method for estimating GHG and VKT Methodology at the municipal scale in the region	Air Quality and Climate Change, Corporate Strategies, Regional Planning	Hadi Dowlatabadi and Milind Kandlikar and their graduate students at Institute for Resources, Environment and Sustainability)	Started: 2015 Expected End: 2016? Status: Ongoing	City of Vancouver; Translink	Kickoff meeting held February 2015; next steps TBD	applied research - air quality and climate change
8	Product labeling research related to Love Food/Hate Waste campaign	Determining how people use <i>Best Before</i> product labels for dairy products other than milk.	Solid Waste & External Relations	UBC Department of Psychology Brain and Attention Research Lab (BAR Lab)	June 2014 - ongoing	National Zero Waste Committee Food Working Group and National Communications Campaigns Working Group	This research will help us understand if people that typically consume milk after its <i>Best Before</i> date can be nudged to do the same with other dairy products, thereby reducing avoidable food waste	applied research - behaviour change re food waste

# Metro Vancouver and UBC Collaborations and Joint Initiatives

Sept 10 ,2015

Ref #	Project/Initiative	Description	Metro Vancouver Department or Division	UBC Department or Program	Duration & Status	Other participants or stakeholders	Comments	Type
9	Street Scape Recycling Project	Design of more effective signage and street recycling facilities.	Solid Waste & External Relations	UBC Department of Psychology Brain and Attention Research Lab (BAR Lab)		started with the Brain Attention Research lab at UBC, now working Emily Carr University of Art + Design	<a href="http://metrovancovervideos.org/2014/09/04/recycling-bin-redesign/">Street Recycling Report</a> <a href="http://metrovancovervideos.org/2014/09/04/recycling-bin-redesign/">http://metrovancovervideos.org/2014/09/04/recycling-bin-redesign/</a>	applied research - behaviour change re recycling
10	Improving Multi-Family Recycling	Identifying best practices to develop recycling resources for that multi-family building managers can use to improve recycling within their complexes	Solid Waste & External Relations	UBC Department of Psychology Brain and Attention Research Lab (BAR Lab)	March 2012 - April 2014	Metro Vancouver Housing, Municipal Waste Reduction Coordinators Committee	Municipalities and other stakeholders are Metro Vancouver's recommendation that recycling collection calendars and other recycling materials use simple icons to depict materials	applied research - behaviour change re recycling
11	Car Share Study	Establish data sharing agreement for access to two survey datasets for PhD research	Regional Planning	UBC Institute for Resources, Environment, and Sustainability (PhD students)	Started: 2008 Ended: 2012 Status: Completed			applied research - car share
12	Climate change Visualization projects	Created "Illustrated Guide to Community Energy; Visualizing Urban Futures: Geomatics Decision Support for Canadian Urban Regions" as well as Interactive Web Interface for Sustainable Energy: "Community Energy Explorer";	Air Quality & Climate Change	UBC Collaborative for Advanced Landscape Planning,	Started: 2012 Ended: 2015 Status: Completed (possibly to be extended)	several municipalities		applied research - climate change adaptation
13	Fraser River project	Shape and review projects related to parks and green space development along the Fraser River.	Regional Planning & Regional Parks	Cynthia Girling, School of Landscape Architecture				applied research - development of urban greenways
14	Potential for Effects of Wastewater in Receiving Environment	Effects of disinfected and non-disinfected municipal wastewater (primary) effluent on mussels: Potential genotoxic and carcinogenic effects	Liquid Waste	Dr. Sue Baldwin, Department of Chemical Engineering,	Started: Expected End: Status:		Currently in reporting phase	applied research - effluent impacts on marine systems
15	Anaerobic / aerobic dual digestion	Study of the gasification of sewage sludge	Liquid Waste	UBC Okanagan School of Engineering UBC Bioreactor Technology Group Cigdem Eskicioglu, Ph.D., P.Eng	Started: Expected End: Status:	NSERC grant-funded research project (Bioreactor Technology Group)	We are a supporting partner in this research and meet with the UBC team every two weeks over a conference call for project updates. 2014 Dual Digestion Project Status.docx <a href="http://orbit/orbit/llisapi.dll/open/9743934">http://orbit/orbit/llisapi.dll/open/9743934</a>	applied research - energy recovery

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16	Study on experience of foreign trained engineers	Learning from the experience of foreign trained engineers, the study will highlight the strategies that have been successful in allowing these engineers to integrate into and make contributions in engineering in Canada.	Human Resources	Dr. Hongxia Shan, UBC Department of Education	Started Fall 2014 ; Study has been funded for 2 years; 2014 to 2016; Status: Active	Participation is open to any foreign credentialed engineers. Dr Shan also expects to interview other employers, recruiters, regulators, continuing educators, immigration workers, and labour market policy makers.		applied reserarch - immigration and employment
17	UBC/Broadway Line Study	UBC and Metro sat on technical and steering committees to refine base traffic zone pop/emp projections and to develop growth scenarios for sensitivity testing	Regional Planning	Joe Stott, planning	Started: 2008 Ended: 2012 Status: Completed			applied research - integrating land use and transportation planning
18	BC Municipal Solid Waste Research Collaborative	This is a partnership between Metro Vancouver Solid Waste department and UBC with the main objective to connect stakeholders from industry, academia and government with common research goals. As a forum, participants can identify and advance applied research projects that address key needs and knowledge gaps in municipal solid waste management in the region.	Solid Waste	Professor Richard Sones, Industry Partnerships, Faculty of Applied Science and Bud Fraser, Engineer, Campus Sustainability				applied research - municipal solid waste
19	Ostara Nutrient Recovery Systems	Provided space and access to sludge etc. in Lulu Island's basement that led to Ostara and their Crystal Green product.	Liquid Waste	Dr. Don Mavinic	Started: Approx 2004 Expected End: Approx 2012 Status: Completed		Project is now complete	applied research - resource recovery
20	Composting pit toilets	Collaborated on effectiveness of composting pit toilets & potential alternatives, at Tynehead Regional Park	Regional Parks	Geoff Hill, Ph. D. candidate, Dept. of Geography	Completed			applied research - resource recovery
21	Bottom Ash utilization options study		Solid Waste	Professor Jim Atwater, Civil Engineering				applied research - resource recovery



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Sept 10 ,2015

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22	Research involving Non-Disclosure Agreements (NDAs)	<ul style="list-style-type: none"> <li>• Utilize the anaerobic digested mixed primary and secondary sludge to simulate the decomposition of wheat waste to produce biogas.</li> <li>• use of raw secondary sewage sludge as raw material to be converted to activated carbon and study the heavy metal adsorption capacity of the converted activated carbon</li> <li>• Primary and secondary effluents as background solution for metal adsorption capacity tests for tea leaves.</li> </ul>	Liquid Waste	Dr. Loretta Li, Prof. John Grace, Department of Civil Engineering,	Started: 2012 Expected End: 2013 Status: Completed		Past activity. 2011-2013	applied research - resource recovery
23	Struvite Formation in the Plants	Worked on a variety of Struvite related project in the Plants, recently evaluated the theoretical risk of struvite formation at Annacis Island WWTP.	Liquid Waste	Dr. Parvez Fattah	Started: 2009 Expected End: 2014 Status: Complete  - 2013 to 2014 work while Parvez as independent		Started working with Dr. Fattah when he was a graduate student at UBC. We have continued to work with him on struvite after his graduation.	applied research - resource recovery
24	Odour Sampling at the Plants	Worked with for many years (2000 -2009) on odour sampling and monitoring work at the plants.	Liquid Waste	Professor Anthony Lau	Started: 2000 Expected End: 2009 Status: Complete		Past activity. Have not done any recent work with UBC in this area.	applied research - waste water treatment
25	Wastewater Research Collaboration	Regular, ongoing efforts to coordinate and inform both parties about current and future potential research.	Liquid Waste	School of Engineering (Civil Engineering)	Started: <2000 Expected End: Ongoing Status: Active		discussions include potential value of MOU to support collaboration	applied research - waste water treatment
26	Mobile Vacuum UV (VUV) pilot research project	Pilot plant investigation of vacuum ultraviolet based water treatment system at the Seymour-Capilano Filtration Plant as part of "Living Lab/Community Circle" initiative.	Water	RES'EAU - Water NET Program		N/A	VUV pilot scale reactor installed at SCFP. Final test results expected January, 2015.	applied research - water quality
27	Process Specialist Consulting	Consulting on a wide range of operations issues at the wastewater treatment plants.	Liquid Waste	Dr. Bill Oldham	Started: Many Years Expected End: 2013 Status: As Required		Past activity	applied research - waste water treatment
28	Annacis Research Centre-based wastewater research	Active and planned projects hosted at ARC, including anammox ammonia reduction, microwave oxidation, and aerobic granular biomass projects	Liquid Waste	School of Engineering (Civil Engineering)	Started: 2011 Expected End: Ongoing Status: Active	Associated Engineering (partner to one project)		applied research - waste water treatment

## Metro Vancouver and UBC Collaborations and Joint Initiatives

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29	PAA Impacts on Receiving Water	PAA (Peracetic Acid) is being tested as a disinfectant at Northwest Langley WWTP. UBC has been retained (at the request of MOE) to evaluate the effect of PAA on algae and fungus in the receiving waters.	Liquid Waste	Dr. John Richardson, Forest and Conservation Sciences	Started: 2013 Expected End: 2014 Status: Complete			applied research - water quality
30	Receiving Environment Monitoring Programs	Carbon and nitrogen isotope analysis	Liquid Waste	Maureen Soon / Kathy Gordon, Department of Earth and Ocean Sciences	Started: Expected End: Status:		Ongoing for annual monitoring programs	applied research - water quality
31	Strait of Georgia Ambient Monitoring Program	Characterization of conditions and circulation patterns in the Strait, monitoring and modeling of distribution, dispersal and removal of contaminants	Liquid Waste	Dr. Rich Pawlowicz, Dr. Roger Francois, Department of Earth, Ocean and Atmospheric Sciences,	Started: 2013 Expected End: 2020 Status: Active		Project is in its 2nd year, current service contract ends Dec 2014, currently working on longer term solution to continue the work.	applied research - water quality
32	Phosphours Recovery Demonstration Unit at Annacis Research Centre	use of the 4th generation tower - technology developed by Dr. Don Mavinc to recover phosphorus in the form of fertilizer to be used as for enriching fish habitat	Liquid Waste	UBC Department of Civil Engineering				
33	Water Research Collaboration	Regular, ongoing efforts to coordinate and inform both parties about current and future potential research.	Water	School of Engineering (Civil Engineering)		LWS - Utility Research and Innovation	Discussions include potential value of MOU to support collaboration	applied research - water issues
34	UBC Career Fair	Participating in UBC Career Fair allows MV to connect with hundreds of students and alumni from all of UBC's academic disciplines, lets students know about job opportunities in our organization, from summer programs to coop to new grad positions (specifically Engineers in Training.) It also provides us with the opportunity to build and strengthen MV presence and brand on Campus	Human Resources	Centre for Student Involvement and Careers, Student Services: Jennie Au	Fall 2006-ongoing			student knowledge & career development
35	Employer Information Session	Employer Information sessions allow us to discuss career opportunities with interested students in a session that's devoted to our organization. We can also interact with candidates through a question and answer period,	Human Resources	Centre for Student Involvement and Careers, Student Services: Jennie Au	Fall 2006 - ongoing			student knowledge & career development
36	Engineering Co-op Graduation Reception	An opportunity to network with graduating engineering students, advise on MV's engineering opportunities and our EIT program.	Human Resources	UBC Engineering Co-op Program	Spring 2007 - ongoing			student knowledge & career development

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37	Nature interpretation	interpretative opportunities in Pacific Spirit Park (PAC) for UBC Education students	Regional Parks	Hartley Banack, Dept of Education				student knowledge & career development
38	Civil Engineering Tour of Seymour Falls Dam – Annual tour	Site tour to Seymour Falls Dam and access to Watershed "borrow" pit to obtain soil samples for construction of model embankment dam.	Water	Dept of Civil Engineering - Civil 413 Earth Dams		WS - O&M WS - Watershed Management WS - Major Projects	Annual tour	student knowledge & career development
39	<i>Collaboration on Circular &amp; Sharing Economy (potential)</i>	Explore research and policies that support expansion of sharing economy and transformation to circular economy	Solid Waste and External Relations	Corporate and Community Planning and research faculty				
40	<i>Collaboration with oquantification of ecosystem services and application to decision making at the local government level (potential)</i>	on-going data collection & management as well as running model to contribute to informed decision-making in the region	Corporate Strategies					collaborative research
41	<i>Collaboration with Urban Forestry Academic Program (potential)</i>	A new Urban Forestry Program will be launched in September 2015 and potential to collaborate with MV on research and projects within the region	Regional and Strategic Planning		first intake is September 2015			collaborative research - urban forestry
42	<i>Livable Regional Students and Scholars Program (potential)</i>	Opportunity to expand the Scholars program in collaboration with MV & UBC to address research needs	Corporate Strategies	USI: Dr. John Robinson and Victoria Smith				
<b>Infrastructure and Operations</b>								
43	Cliff erosion/stablization	Provided comments on upcoming UBC Cliff Study in 2015	Regional Parks	Doug Doyle UBC & Greg Paris MV				management of contingent lands
44	Pacific Spirit Park Management	UBC has provided an update on the student resident tower proposal	Regional Parks	Joe Stott				management of contingent lands
45	UBC Integrated Stormwater Management	participation in open houses as well as providing background information and comments in UBC Planning and potential impacts on Pacific Spirit Park	Regional Parks	Doug Doyle UBC				management of contingent lands
46	Vegetation Management	vegetation work along Pacific Spirt Park/UBC property lines	Regional Parks	Colin Verner, Grayzma Rogeau				management of contingent lands
47	Special Event Coordination	eventsaffecting the interface of Pacific Spirit Park and UBC	Regional Parks	Arlene Chan				management of contingent lands
48	Contamination/Emergency response		Regional Parks	Noga Levitt			recent chlorine, ammonia spill into Pacific Spirit Park (PAC)	management of contingent lands

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49	UBC Security	campus security patrol	Regional Parks	Ali Nojdehl				management of contingent lands
50	Campus Transportation Planning	road and bike infrastructure	Regional Parks	Kristina Falkner				management of contingent lands
51	Campus Planning	campus and community planning and development including engagement process regarding development	Regional Parks	Joe Stott				management of contingent lands
52	South Campus	south campus planning and development	Regional Parks	Paul Young				management of contingent lands
53	Campus Operations	utilities and infrastructure operations & management	Regional Parks	John Metras				management of contingent lands
54	Museum of Anthropology Interface with Pacific Spirit Park	Pacific Spirit Park (PAC)/MOA interface, views issues	Regional Parks	Moya Waters				management of contingent lands
55	Botanical Gardens	Pacific Spirit Park (PAC)/UBC interface issues	Regional Parks	Colleen Bruce				management of contingent lands
56	911 Services	Region wide E911 initial call answer contract	Corporate Services	Reg Fountain, Manager, Emergency Management & Continuity Planning		Region Wide Service		regional government service provision
57	Electoral Area A Emergency Management		Corporate Services & Electoral Area	Reg Fountain, Manager, Emergency Management & Continuity Planning				regional government service provision
58	ESSD (Emergency Social Services Director) support	Currently the Emergency Social Services Director for Electoral Area A (including UBC). Assist with planning, exercises, training, liaising with partners, and response as needed.	Corporate Services	Reg Fountain, Manager, Emergency Management & Continuity Planning				regional government service provision
59	Sewer Services	Provision of sewage services through the SW Marine Drive Interceptor	Liquid Waste		Started: <1967 Expected End: Ongoing Status: Active			regional government service provision
60	Emergency Management	Provide rep to UBC Emergency Operations Centre (EOC), coordinate with MV EOC	Regional Parks	West Area Parks Operations Supervisor			Is there a reference in the MV Electoral Area A Emergency Plan or MV Emergency Plan?	regional government service provision
61	Preparing UBC campus population, housing and employment estimates and forecasts for Metro 2040 and regional utilities / transportation modeling		Regional Planning	Joe Stott (UBC Planning Staff), Lisa Colby (UBC Planning Staff), executive director of the UNA, several student groups including AMS and Director Harris				regional government service provision
62	Liquor licence applications	MV Board Approval required for Liquour Primary	Electoral Area	the proponent varies but mostly UBC Athletics or the AMS.	on-going	Liquor License Branch	Could be resourced if MV Board passed an opting out resolution	regional government service provision

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63	Electoral Area A General Local Elections	Electoral Area A elections and other voting opportunities affect voters living at UBC. Outreach activities are developed to reach those voters.	Electoral Area	Electoral Area		(1) Alma Mater Society AMS; and (2) University Neighbourhood Association UNA		regional government service provision
64	Drainage Services Spiral Drain	Ed von Euw & Mark Wellman work with and provide support for this existing drainage facility	Liquid Waste	Infrastructure Development, EWS, Planning Doug Doyle (UBC)	Started: 1956 Expected End: 2016 Status: ongoing		Board direction in 2007 was to work with UBC to transfer ownership of the spiral drain to UBC.	regional government service provision
65	<i>Multi-Family Recycling and Organics Programs in the UNA/UBC (potential)</i>	opportunity to pilot Multi-family Recycling and Organics Diversion	Solid Waste	UNA and UBC Bud Fraser				
66	<i>UBC Campus Forest Management Plan (potential)</i>	Formulate a Campus Forest Management Plan to address sustainability planning objectives	Regional and Strategic Planning	John Madden, Sustainability and Engineering, Corporate and Community Planning	Start Q1 2016: 1 year program in early scoping stages	UBC Botanical Gardens, UBC Forestry, Bldg Ops, Arborist, SALA		Planning and Policy/Research/SEEDS
67	<i>Climate Action Plan (II) potential</i>	Develop 2nd 5 year Climate Action Plan which will identify scope 1,2 and 3 emissions and targets moving forward	Air Quality & Climate Change	John Madden, Sustainability and Engineering, Corporate and Community Planning	Start Q2 2015: 1 year program in early scoping stages	Climate Action Secretariat, BC Hydro, Fortis, MV		
68	<i>Regional Utility Service Provision (potential)</i>	Review provision of regional water and liquid services	Corporate Planning, Liquid Waste and Water	Water and Energy Services				
<b>Strategic Initiatives and Partnerships of Regional Importance</b>								
69	Housing Justice Project Canada	Rental Housing Supply Coalition led by Metro Vancouver (now defunct) was a partner in the Housing Justice Project.	Housing	Dr. Penny Gurstein, School of Community and Regional Planning, U		Pivot Legal Society		participation in Committee/Advisory groups
70	Air Quality and Health Steering Committee	ongoing collaboration between air quality agencies and health agencies and academics	Air Quality & Climate Change	UBC School of Population and Public Health;		BC Ministry of Environment, BC Centre for Disease Control, BC Lung Association, Health Canada, FVRD		participation in Committees/Advisory groups
71	UBC Odour Panel	Did a lot of work with the recognised odour control panel.	Liquid Waste		Started: 2002 Expected End: 2003 Status: Complete		Past activity. Have not done any recent work with UBC in this area.	participation in Committees/Advisory groups
72	Burns Bog Ecological Conservation Area Scientific Committee	Member of Burns Bog Ecological Conservation Area (BBECA) Scientific Advisory Panel - develops and supports research projects in Burns Bog	Regional Parks	Dr. Dan Moore, Department of Geogrpahy.				participation in Committees/Advisory groups
73	Regional Planning Advisory Committee membership		Regional Planning	Joe Stott attends quarterly				participation in Committees/Advisory groups

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74	UBC Industry Advisory Council	To provide advice on matters relating to UBC's academic programs, teaching, research and professional services.	Water	Dept of Civil Engineering		External members are typically senior leaders from industry, governments and other organizations in BC	Metro Vancouver represented by General Manager - Water Services for 3-year term.	participation in Committees/Advisory groups
75	Metro Agricultural Advisory Committee		Regional Planning	Dr. Andrew Riseman with Faculty of Land and Food System has been participating for the last three years.				participation in Committee/Advisory groups
76	Regional Prosperity Initiative	multi-party collaboration on a metropolitan approach to ensuring the region's ongoing prosperity	Corporate Strategies	UBC Campus + Community Planning				
77	Regional Climate Action Initiatives		Air Quality & Climate Change	UBC Campus + Community Planning				
78	Regional Sustainability Round Table		Planning, Policy and Environment	UBC Campus + Community Planning				
79	Integration of regional growth management and transportation planning		Regional Planning	UBC Campus + Community Planning				