

The University of British Columbia | Okanagan Campus

# INTEGRATED RAINWATER MANAGEMENT PLAN

Final Report | Part 5: Consultation Process



a place of mind

THE UNIVERSITY OF BRITISH COLUMBIA

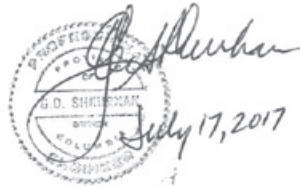
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## **ACKNOWLEDGEMENT**

The University respectfully acknowledges the traditions and customs of the Okanagan Nation and its people in whose territory the campus is situated. The Syilx (Okanagan) people have been here since time immemorial. In September 2005, the Okanagan Nation Alliance officially welcomed UBC to traditional Syilx (Okanagan Nation) territory in an official ceremony, Knaqs npi'lsmist, where UBC signed a Memorandum of Understanding with the Okanagan Nation.

As they have been stewards of this traditional territory since time immemorial, UBC works with the Okanagan Nation to ensure they are partners in the pursuit planning at the Okanagan Campus.

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# **UBC Okanagan Campus Integrated Stormwater Management Plan**

## **Phase 1 - Public Consultation Summary Report**

June 2016

**campus + community** planning



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# 1. Executive Summary

UBCO is undertaking a process to develop an Integrated Stormwater Management Plan (ISMP) to responsibly manage the stormwater that falls on campus, and to sustainably accommodate the future growth of the campus. As part of this process, the Sustainability Office, Campus Planning and Development, has been seeking input from the campus community on ideas of how to manage stormwater while aiming to improve the local environment, mitigate flooding risk, and maintain wildlife and their habitats.

The process to develop an ISMP builds on the UBC Okanagan Campus Plan 2015 and Whole Systems Infrastructure Plan 2016, which envision stormwater management strategies that enhance ecosystem assets.

This report summarizes the input received during the first phase of public consultation on the Integrated Stormwater Management Plan, which took place from March 23 – April 10, 2016, with opportunities to provide input online or in person at the public open house that was held on April 7, 2016. The Sustainability Office notified the Okanagan campus community and project stakeholders through advertising, email, online notification and an open house. As a result of this outreach, we had:

- **176** unique page views to the ISMP pages on the Sustainability Office website
- **11** questionnaires completed.
- **8** key stakeholder interviews

## Executive Summary of Feedback Received

We heard general support for the development of an Integrated Stormwater Management Plan for the campus. Support was expressed to manage stormwater on site rather than wasting or diverting it. We learned that people viewed stormwater features, such as the campus' engineered stormwater retention pond, rain gardens and green roofs, as important to them. The retention pond in particular, was valued by participants for the relaxation and recreation amenity it provided, in addition to its stormwater functions.

We heard support for the reclamation of new natural areas for stormwater management, and management of sensitive great basin spadefoot toad and water fowl habitats. Support was expressed for increased infiltration measures and constructed wetlands, when deployed with proven technologies. Support was also expressed for utilizing stormwater for irrigation, along with planting drought resistant vegetation to reduce water use. We did hear some concerns about the maintenance required for open bodies of water and the potential for increased mosquito populations.

We heard strong support for the integration of education and research within the design of stormwater features. For example, support was expressed to display educational signage nearby stormwater features. These suggestions included showcasing sustainable technology and providing indigenous translations.

Detailed feedback and responses are included in Section 5.



## 2. Public Consultation Process Overview

The public consultation process to develop an Integrated Stormwater Management Plan will take place over two phases – Spring 2016 (Phase 1) and Fall 2016 (Phase 2).

In Phase 1 (Spring 2016), public consultation focused on presenting UBC's current approach to stormwater management on the Okanagan campus, gauging the campus community's understanding of stormwater management practices and generating ideas for stormwater management opportunities on campus.

In this phase we were seeking feedback in four key areas – how aware the campus community is of existing stormwater features, how existing stormwater features are currently being used, what and where potential technologies could be implemented, and the proposed approach and objectives of the Integrated Stormwater Management Plan.

The opportunities to learn about the process and provide input included:

- **Online consultation** from March 23 – April 10 2016 at [sustain.ok.ubc.ca/stormwater](http://sustain.ok.ubc.ca/stormwater)
- **Public Open House**
  - April 7, 11:00am – 2:00pm, Fipke Centre, Foyer
- **Display at Spring Fest Event**
  - Thursday, March 31, 12:00pm – 1:30pm, Central Courtyard

Phase 2 will focus on obtaining feedback from the campus community on proposed options that have been developed by a stormwater management consultant.

## 3. Public and Stakeholder Notification and Outreach

### Notification of Public Consultation

The Sustainability Office provided broad notification of the March 23 - April 10, 2016 public consultation through the following print advertisements and online channels (circulation numbers are shown in brackets).

#### Print Advertising

- The Phoenix, published on March 14 (circ 2,000)

#### Newsletters

- The Exchange, published on March 16 (circ 1,140)

#### Website

- Campus Sustainability Office website - project webpages (176 unique page views)

#### Print Materials

- Posters distributed to the Residence Life Team – student residences (circ 35)
- Posters distributed to Academic Buildings (circ 35)



- Bookmarks distributed at campus events (500)

#### Digital and Social Media

- Campus digital signage between March 23 – April 10
- Posts to UBC's Okanagan campus Twitter account between March 23 – April 10 (779 followers)
- Posts to UBC's Okanagan campus Facebook account between March 23 – April 10 (4,396 followers)
- Notification about the public consultation process was also sent out through Campus Life communications channels.

## 4. Public Consultation Format

### Targeted Stakeholder Interviews

Sustainability Office staff invited eight UBC experts to meet for targeted interviews. At these meetings, participants provided input on the proposed approach and objectives, and generated ideas that could be addressed in the plan. The invited stakeholders included representatives from:

- Irving K Barber School of Arts and Sciences, Biology
- Irving K Barber School of Arts and Sciences, Community, Culture, and Global Studies
- Irving K Barber School of Arts and Sciences, Earth and Environmental Sciences
- UBC Student Services, Aboriginal Programs and Services
- UBC Institute for Healthy Living and Chronic Disease Prevention and Health and Wellness
- UBC Okanagan School of Engineering
- The Okanagan Institute for Biodiversity, Resilience and Ecosystem Services (BRAES)
- UBC Okanagan Faculty of Management

A total of eight stakeholders were interviewed between April 18 and April 26 2016, and each interview was approximately one hour in duration. During these interviews, experts provided recommendations on integrated stormwater technology, methods and best management practices, associated climate, ecosystems and biodiversity considerations, locations of interest with regards to stormwater management, and additional sources of information and collaboration opportunities.

These conversations have been summarized in Section 5 and included in Appendix V.

### Public Open House

A public open house took place on April 7, 2016, at the Fipke Centre foyer from 11:00am to 2:00pm. The event included display boards that described the approach and objectives of the Integrated Storm Water Management Plan, the Okanagan Climate, existing infrastructure, future development sites and potential technologies, and the opportunities to provide input online or in person. Sustainability Office

and Campus and Community Planning technical and public engagement staff from both UBC's campuses were on hand to answer questions and discuss the consultation materials.

The questionnaire and public open house display boards are included in Appendix I and Appendix III.

## Online Consultation

Online consultation took place between March 23 – April 10, 2016 on the Sustainability Office website. The content hosted online was the same as was displayed at the open house: the project approach and objectives, information on the Okanagan climate, existing stormwater infrastructure, potential technologies and future development plans, in addition to a summary of the planning process and timeline, and consultation opportunities (including a link to the questionnaire).

# 5. Feedback Summary

## Online and Public Open House

### Questionnaires – What we Heard

Below is a summary of the comments we received through the online and public open house questionnaires. The tables below reflect the comments we most frequently heard from the 11 questionnaire respondents.

Verbatim questionnaire comments are included in Appendix V.

### Question 1 – Awareness of Existing Stormwater Infrastructure

Which stormwater management features on campus you are aware of?

Theme	#
The stormwater retention pond	10
Swales (sloping ditches) east of Parking Lot H	8
Green roofs (e.g. Purcell Residences, Reichwald Health Sciences Centre, Engineering, Management and Education)	7
I'm not aware of any of the above	1

### Question 2(a) – Use of existing Stormwater Infrastructure

Please tell us more about how you use green roofs

Theme	#
Relaxation	4

Theme	#
Social gathering	2
For teaching and learning	2
Other (provide maintenance)	2
Research	1
Recreation	1

#### Question 2(b) – Use of existing Stormwater Infrastructure

Please tell us more about how you use the stormwater retention pond

Theme	#
Relaxation	9
Recreation	4
Social gathering	3
For teaching and learning	3
Other (to study, provide maintenance, don't use)	3
Research	1

#### Question 2(c) – Use of existing Stormwater Infrastructure

Please tell us more about how you use the swales (sloping ditches) east of Parking Lot H

Theme	#
Other (wildlife viewing, future development, provide maintenance, don't use, wildlife outreach)	5
For teaching and learning	2
Research	2
Recreation	1
Relaxation	1
Social gathering	1

### Question 3 – Importance of Stormwater Infrastructure

Stormwater features can take a number of forms, such as the campus' engineered stormwater retention pond, rain gardens or green roofs. Now that you have learned about these features through this consultation, how important are they to you?

Theme	#
Very important	4
Somewhat important	3
Neutral	0
Somewhat unimportant	0
Very unimportant	0

### Question 4(a) – Comments on objectives

What comments do you have on the objectives of the stormwater management project?

Theme	#
General Support for ISMP	3
Support to reclaim natural areas and habitat	3
Support for additional retention ponds/wetlands	2
Support for planting drought resistant vegetation	2
Support for using stormwater for irrigation	2
Concerns about loss of natural areas and habitat	1
Stormwater infrastructure: Support for daylight streams	1
Suggestion for UBC to recognized as a best practice leader in ISMP practices	1

### Question 4(b) – Comments on approach

What comments do you have on our approach to managing stormwater on campus?

Theme	#
General Support for the ISMP	4

Theme	#
Outcomes should be included in the Campus Plan	1
Suggestion for UBC to be recognized as a best practice leader in ISMP practices	1
Support for additional outreach to UBC Okanagan Staff and Faculty	1

#### Question 4(c) – Development sites and potential technologies

What comments do you have on the areas we have identified that present opportunities for managing our stormwater (e.g. future development sites or potential technologies)?

Theme	#
Support for using stormwater for irrigation	3
Support for improved infiltration measures	2
Support for additional retention ponds/wetlands	2
Support to use stormwater infrastructure in education/research programs	2
Support for the preservation of existing natural areas and habitat	1
Area on campus to inform designs or address existing stormwater issues	1
Support to reclaim additional natural areas and habitat	1
Concerns about stormwater infrastructure maintenance	1
Vegetation recommendation: trembling aspens	1

#### Question 4(d) – General comments

Do you have any other comments?

Theme	#
Support to use stormwater infrastructure in education/research programs	2
Support for planting drought resistant vegetation	2
Concerns about stormwater infrastructure maintenance	2

Theme	#
Area on campus provided that could inform designs or address existing stormwater issue	2
Support for improved infiltration measures	1
Support to reclaim additional natural areas and habitat	1
Support for using stormwater for irrigation	1

## Stakeholder Interviews

### What we Heard

Below is a summary of the comments we received at the targeted stakeholder interviews. The tables below provide a summary of the comments received from the eight interviewees.

A summary of each interview is included in Appendix V.

### Natural Areas

Five of the eight stakeholders expressed natural areas as an important theme to include in the plan. The most common recommendation was to preserve and enhance existing natural areas, such as spadefoot toad and water fowl habitat. Several stakeholders also expressed support for the existing retention pond and how it successfully provides opportunities for research, teaching, and recreation. There was also support for the reclamation of new natural areas. Lastly, stakeholders encouraged the planting of drought resistant vegetation.

Theme	#
Support for the preservation of existing natural areas and habitat	5
Existing pond/wetland is working well	2
Support for planting drought resistant vegetation	2
Support to reclaim additional natural areas and habitat	2

### Stormwater Education and Research

The support for integrating education and research into stormwater management features was expressed in all of the interviews. The suggestions included designing features that were accessible to researchers and including educational signage that described the sustainability features with corresponding indigenous words.

Theme	#
Support to use stormwater infrastructure in	4

Theme	#
education/research programs	
Suggestion to include educational signage (e.g. indigenous words, sustainability)	3
Suggestion for stormwater demonstration projects	2
Suggestion to include information on how people use water	1

### Stormwater Technology Options

Recommendations on possible stormwater technology were provided at all of the interviews. In particular, there was strong support to increase infiltration on campus. There were several suggestions of retaining stormwater for irrigation along with the creation of additional wetlands though several concerns were raised about the maintenance of these areas with regard to mosquitos.

Theme	#
Support for improved infiltration measures	5
Support for using stormwater for irrigation	4
Support for additional retention ponds/wetlands	3
Concerns about infrastructure maintenance	2
Support for additional rain gardens	1
Concerns about contaminants in stormwater runoff	1
Concerns about infrastructure maintenance	1
Support for sustainable materials in infrastructure designs	1

### Social Sustainability

The opportunity for stormwater features to provide a social amenity was raised in three interviews. It was suggested that design features should be accessible to all and increase social and physical wellbeing.

Theme	#
Suggestion to include a social amenity component within future designs	2
Suggestion to ensure stormwater features are accessible to all	2
Suggestion to ensure stormwater features support mental and physical wellbeing	1



### Plan Implementation

Recommendations on plan implementation were provided in six interviews. In particular, it was suggested to deliver first on existing operational needs and focus research on longer horizon projects, considering aspects of campus growth and climate change.

Theme	#
Operational and/or plan implementation suggestions	4
Consider climate change in plan development	2

### Additional Resources and Potential Resource Partnerships

All eight stakeholders provided additional resources that could be useful in the development of the plan along with potential research partnerships. These have been separated from the other comments and provided in Appendix II.



## 6. Participant Demographics

The participant demographics below reflect the responses from the 11 questionnaires.

How are you associated with UBC?	Count
Staff	8
Student	1
Faculty	1
Other (not specified)	1
No direct association to UBC	0
Alumni	0

How did you find out about this event?	Count
Other (invited by staff involved in process)	5
Walked by	2
Heard about it from a friend	2
The Exchange	2
Email	1
Poster	1
Digital Signage	0
Ad in the Phoenix	0
Twitter	0
Facebook	0

## 7. Next Steps

During the summer of 2016, staff will work with an external consultant to undertake site and geo-technical soils analysis, stormwater modelling analysis, the development of stormwater management options; and the establishment of a final integrated stormwater management plan. Stormwater management options will be available for review and consultation with the campus community in fall 2016. Final recommendations will then be developed through winter 2016, targeting completion of an

Integrated Stormwater Management Plan late November/early December based on the campus community input and technical considerations.

## 8. Appendices

**Appendix I: Feedback Form**

**Appendix II: Additional Resources and Potential Research Partners**

**Appendix III: Open House Display Boards (attached)**

**Appendix IV: Verbatim Online Questionnaire Feedback (attached)**

**Appendix V: Summary of Stakeholder Interviews (attached)**

## Appendix I: Feedback Form

### Feedback Form

Integrated Stormwater Management Plan (ISMP) Open House  
April 7, 2016 | 11:00am-2:00pm | Fipke Foyer

Thank you for participating, your feedback is important to us.

#### What's your point of view?

1 a. We would like to get a better understanding of how aware the campus community is of our existing stormwater management features. Which stormwater management features on campus you are aware of?

- Green roofs (e.g. Purcell Residences, Reichwald Health Sciences Centre, Engineering, Management and Education)
- The stormwater retention pond
- Swales (sloping ditches) east of Parking Lot H
- I'm not aware of any of the above

1b. If you are aware of any of the above, please tell us more about how you use the feature(s)?

- Recreation
- Relaxation
- Social gathering
- For teaching and learning
- Research
- Other: \_\_\_\_\_

2. What comments do you have on the objectives of the stormwater management project?

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3. What comments do you have on our approach to managing stormwater on campus?

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4. What comments do you have on the areas we have identified that present opportunities for managing our stormwater (e.g. future development sites or potential technologies)?

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5. Stormwater features can take a number of forms, such as the campus' engineered stormwater retention pond, rain gardens or green roofs. Now that you have learned about these features through this consultation, how important are they to you?

- Very important  
Somewhat important  
Neutral  
Somewhat unimportant  
Very unimportant

6. Do you have any other comments?

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**Tell us about you:**

1. How are you associated with UBC? (*please check all relevant boxes*)

- ☐ Student    ☐ Faculty    ☐ Staff ☐ Alumni    ☐ No direct association  
☐ Other: \_\_\_\_\_

2. How did you find out about this event? (*please check all relevant boxes*)

- ☐ Poster    ☐ Digital signage    ☐ Ad in the Phoenix    ☐ The Exchange    ☐ Email  
☐ Twitter    ☐ Facebook    ☐ From a friend    ☐ Walking by  
☐ Other: \_\_\_\_\_

**Privacy Notification:**

The contents of this Feedback Form may be made available for public viewing. Any personal information you provide in this Feedback Form is collected under the authority of section 26(c) of the *Freedom of Information and Protection of Privacy Act*. UBC Campus and Community Planning is collecting this information for the purposes of this consultation process. For more information about the collection of your personal information, contact Gabrielle Armstrong, Senior Manager, Consultation, at (604) 822-9984 or by email at [gabrielle.armstrong@ubc.ca](mailto:gabrielle.armstrong@ubc.ca)

**Thank you for taking the time to provide your feedback.**

If you would like to drop off, email or mail in this feedback form, please return it by end of day, **April 10, 2016** to:

Campus and Community Planning, UBC, 2210 West Mall, Vancouver, BC V6T 1Z4  
Attention: **Gabrielle Armstrong, Senior Manager, Public Engagement**  
For further information, please contact [gabrielle.armstrong@ubc.ca](mailto:gabrielle.armstrong@ubc.ca) or **(604) 822-9984**

## Appendix II: Additional Resources and Potential Research Partners

- Much of Rutland's potable water is sourced from the Great Okanagan Aquifer which extends partially beneath campus through the Rutland area;
- Reference student VOICE study for history on the pond;
- Student reports posted on Health and Wellness related to pond/stormwater and other ecological zones on campus may be of relevance to this project; for future reference some reports also describe research conducted on the west campus lands;
- Potential teaching opportunities in geophysics on detecting buried objects through ground conductivity or ground penetrating radar and in hydrogeology on soils mapping, permeability and moisture testing;
- OBWB Water Stewardship Council has sponsored a project to develop a wetland strategy for the Okanagan Basin; shows that 80-90% original wetlands are gone; may be relevant to this project;
- Opportunities to engage the Aboriginal Education Council before storm water options are vetted to the community in September [meeting in June];
- Okanagan Nation Alliance (ONA) is involved in watershed restoration and bringing the salmon back to the Okanagan;
- The Okanagan Nation Water Declaration (provided by A. Vedan attached) is a very important declaration in honor of the responsibility and relationships to water  
<http://www.sylx.org/operations/natural-resources/land-use/water/>
- ONA also works with the Okanagan Basin Water Board (OBWB) on a variety of initiatives
- The En'owkin Centre is involved with land-based learning and eco-literacy initiatives and Sylx traditional ecological knowledge and stewardship
- School of Engineering has access to no cost GIS for modelling work.
- Okanagan soils inventory database was updated to a 10 meter resolution by the Summerland Research Station; this will provide useful information
- The Pacific Climate Institute for Solutions (PCIS) has done modelling to 500 x 500 meter resolution for the interior of BC. This information should be referenced by the ISMP team.
- Trails action group has been discussing how people use the pond space; we want to encourage people to go outside into the environment





# UBC Okanagan Campus Integrated Rainwater Management Plan

## Phase 2 - Public Consultation Summary Report

November 2016

**campus + community** planning



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# 1. Executive Summary

UBCO is undertaking a process to develop an Integrated Rainwater Management Plan (IRMP) to responsibly manage the rainwater that falls on campus, and to sustainably accommodate the future growth of the campus. As part of this process, the Sustainability Office, Campus Planning and Development, has been seeking input from the campus community on ideas of how to manage rainwater while aiming to improve the local environment, mitigate flooding risk, and maintain wildlife and their habitats.

The process to develop an IRMP builds on the UBC Okanagan Campus Plan 2015 and Whole Systems Infrastructure Plan 2016, which envision rainwater management strategies that enhance ecosystem assets.

This report summarizes the input received during the second phase of public consultation for the Integrated Rainwater Management Plan, which took place from October 31 – November 13, 2016, with opportunities to provide input online or in person at the public open house that was held on November 2, 2016. The Sustainability Office notified the Okanagan campus community and project stakeholders through advertising, email, online notification and an open house. As a result of this outreach, we had:

- **77** unique page views to the IRMP pages on the Sustainability Office website
- **1** public open house
- **4** questionnaires completed.
- **1** key stakeholder meeting

## Executive Summary of Feedback Received

We heard support for the proposed approach to managing rainwater for the campus. In particular, support was expressed for managing rainwater at the site in the Main Campus area and the exploration of strategies that take advantage of the rapid infiltration zone in the Innovation Precinct. A suggestion was also raised to look at rainwater as a resource by managing rainwater at the building scale, including storing rainwater for future indoor and outdoor use where possible.

With regard to Low Impact Development techniques, we heard the most support for swales, flow-through planters, and wet pond facilities. Although there was support for dry pond strategies, there was some concern about the how these areas might look and whether they would be useable during wet periods.

Lastly, there was a discussion on the potential for partnerships between the Academic community and the Sustainability Office, Campus Planning and Development, through the performance monitoring of existing and future rainwater infrastructure.

Detailed feedback and responses are included in Section 5.

## 2. Public Consultation Process Overview

The public consultation process to develop an Integrated Rainwater Management Plan (IRMP) took place over two phases – Spring 2016 (Phase 1) and Fall 2016 (Phase 2).

Following from the input received from the campus community during Phase 1 of the IRMP public consultation, a consultant was hired to perform a soils analysis, run various rainwater modelling scenarios, and propose options for how the University could proceed in managing rainwater. In Phase 2 (Fall 2016), public consultation focused on getting feedback on the emerging approaches to managing rainwater.

In phase 2, we were seeking feedback in three key areas – feedback on the proposed approach to managing rainwater in the Main campus area, Innovation Precinct area, and feedback on potential Low Impact Development techniques.

The opportunities to learn about the process and provide input included:

- **Online consultation** from October 31 – November 13 2016 at [sustain.ok.ubc.ca/rainwater](http://sustain.ok.ubc.ca/rainwater)
- **Public Open House**
  - November 2, 10:00am – 2:00pm, EME Building, Richard S. Hallisey Atrium

UBCO's Campus Planning and Development team, Sustainability Office, will now work with the UBC Planning Team and consultant to finalize the Integrated Rainwater Management Plan which will be presented to executive for endorsement in 2017.

## 3. Public and Stakeholder Notification and Outreach

### Notification of Public Consultation

The Sustainability Office, Campus Planning and Development provided broad notification of the October 31 - November 13, 2016 public consultation through the following print advertisements and online channels (circulation numbers are shown in brackets).

#### Print Advertising

- The Phoenix, published on October 3, 2016 (circ 2,000)

#### Newsletters

- The Exchange, published October 19, 2016 (circ 1,140)

#### Website

- Campus Sustainability Office website - project webpages (77 unique page views)

#### Print Materials

- Posters distributed student residences and academic buildings (250)
- Bookmarks distributed at campus events (250)

### Digital and Social Media

- Campus digital signage between October 31 – November 13
- Posts to UBC's Okanagan campus Twitter account between October 31 – November 13 (3,365 followers)
- Posts to UBC's Okanagan campus Facebook account between October 31 – November 13 (5,733 followers)
- Notification about the public consultation process was also sent out through Campus Life communications channels.

## 4. Public Consultation Format

### Public Open House

A public open house took place on November 2, 2016, at the EME Building, Richard S. Hallissey Atrium from 10:00am to 2:00pm. The event included display boards that described: the project approach and objectives, information on the Okanagan climate, existing rainwater infrastructure, what we heard during phase 1 of the public consultation, technical analysis completed by the consultant, emerging directions for managing rainwater in the Main campus and Innovation Precinct areas, Low Impact Development technology examples, and project examples utilizing learnings from the IRMP. Sustainability Office and Campus and Community Planning technical and public engagement staff from both UBC's campuses were on hand to answer questions and discuss the consultation materials.

The questionnaire and public open house display boards are included in Appendix I and Appendix III.

### Online Consultation

Online consultation took place between October 31 – November 13, 2016 on the Sustainability Office website. The content hosted online was the same as was displayed at the open house, in addition to a summary of the planning process and timeline, and consultation opportunities (including a link to the questionnaire).

A summary of the responses received during the consultation period is provided in Section 5 and the questionnaire is provided in Appendix I.

### Targeted Stakeholder Meeting

In addition to the Public Open House and the Online Consultation, Sustainability Office staff invited input from the UBC experts that took part in the phase 1 interviews. At a meeting following the Open House, one of these experts provided input on the proposed approach to manage rainwater. The invited stakeholders included representatives from:

- Irving K Barber School of Arts and Sciences, Biology
- Irving K Barber School of Arts and Sciences, Community, Culture, and Global Studies

- Irving K Barber School of Arts and Sciences, Earth and Environmental Sciences
- UBC Student Services, Aboriginal Programs and Services
- UBC Institute for Healthy Living and Chronic Disease Prevention and Health and Wellness
- UBC Okanagan School of Engineering
- The Okanagan Institute for Biodiversity, Resilience and Ecosystem Services (BRAES)
- UBC Okanagan Faculty of Management

These conversations have been summarized in Section 5.

## 5. Feedback Summary

### Survey and Stakeholder Meeting Responses

Below is a summary of the comments we received through the online and public open house questionnaires, along with the targeted stakeholder meeting following the open house.

Verbatim questionnaire comments are included in Appendix III.

#### Question 1 – Main Campus area

What comments do you have about the proposed approach to managing rainwater at project sites in the Main campus area?

We heard support for using rainwater as a resource in the Main Campus area. This included recommendations to use rainwater in buildings (e.g. toilet flushing) and for irrigation (e.g lawn watering). We also heard a suggestion that rainwater storage infrastructure could potentially be used as temporary storage during large storm events. Lastly, we heard a suggestion to integrate both rainwater and potable water sources in a way that considers use of water during dry seasons.

#### Question 2 – Innovation Precinct area

What comments do you have about the proposed approach to managing rainwater at project sites in the Innovation Precinct area?

We heard support for the integration of a pond and surrounding vegetation in the Innovation Precinct area. We also heard support for pairing a centralized facility with building scale storage to both reduce strain on the existing infrastructure and to divert rainwater to drier locations.

### Question 3(a) – Low Impact Development strategies

What are your favorite Low Impact Development (LID) strategies?

Theme	#
Swales	3
Flow-through Planters	3
Dry Detention Ponds	1
Wet Detention Ponds	2
Other (e.g. whatever works best for the application)	2

### Question 3(b) – Low Impact Development strategies

Are there any Low Impact Development (LID) strategies you don't like? Why?

Theme	#
Dry Detention Ponds	1
Other	1

We heard concerns that dry ponds may not be a desirable place for the campus community during wet periods.

### Question 4 – Approach

Is there anything missing from UBC's proposed approach to rain water management?

We heard that the integration of UBC buildings in the rainwater management strategy was missing from the information presented.

### Question 5 – Objectives

How do you feel the IRMP objectives are reflected in the following (Main Campus, Innovation Precinct)?

We heard general support that the IRMP objectives were met in the proposed strategy.

### Question 6 – Other Comments

We heard suggestions around the potential for performance monitoring by the research community to inform the IRMP. This monitoring campaign might involve researchers and students with the capability to monitor water levels and/or potential contaminants at existing and future rainwater infrastructure.



## 6. Participant Demographics

The participant demographics below reflect the responses from the 4 questionnaires.

How are you associated with UBC?	Count
Staff	0
Student	3
Faculty	1
Other (not specified)	0
No direct association to UBC	0
Alumni	0

How did you find out about this event?	Count
Other	0
Walked by	2
Heard about it from a friend	0
The Exchange	0
Email	0
Poster	2
Digital Signage	0
Ad in the Phoenix	0
Twitter	0
Facebook	1

## 7. Next Steps

During the fall of 2016, staff will work with an external consultant to finalize rainwater management strategy recommendations for different areas of campus; and the establishment of a final integrated rainwater management plan, targeting completion of an Integrated Rainwater Management Plan late early December based on the campus community input and technical considerations.

The emerging directions from the Integrated Rainwater Management Plan process will continue to inform ongoing parallel projects. This includes recommendations on potential rainwater management techniques for the Teaching and Learning Centre and the Innovation Precinct Structure Plan.

## 8. Appendices

**Appendix I : Feedback Form**

**Appendix II : Open House Display Boards (attached)**

**Appendix III : Verbatim Online Questionnaire Feedback (attached)**

## Appendix I : Feedback Form

### Feedback Form

Integrated Rainwater Management Plan (IRMP) Open House  
Wednesday, November 2, 2016 | 10:00am-2:00pm | EME Building

#### We want to hear from you – what are your thoughts on our proposed strategy?

1. What comments do you have about the proposed approach to managing rainwater at project sites in the Main campus area?

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2. What comments do you have about the proposed approach to managing rainwater in the Innovation Precinct?

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3. What are your favorite Low Impact Development (LID) strategies?

- ☐ Swales
- ☐ Infiltration Planters
- ☐ Flow-through Planters
- ☐ Dry Detention Ponds
- ☐ Wet Detention Ponds
- ☐ Other (please specify) \_\_\_\_\_

4. Why is this your favourite?

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5. Are there any Low Impact Development (LID) strategies do you do not like?  
(check all that apply)

- ☐ Swales
- ☐ Infiltration Planters
- ☐ Flow-through Planters
- ☐ Dry Detention Ponds
- ☐ Wet Detention Ponds
- ☐ Other (please specify) \_\_\_\_\_

6. If so why?

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7. Is there anything missing from UBC's proposed approach to rain water management?

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8. How do you feel the IRMP objectives are reflected in the following?

Main Campus

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The Innovation Precinct

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9. Other Comments

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**Tell us about you:**

1. How are you associated with UBC? (please check all relevant boxes)

☐ Student ☒ Faculty ☐ Staff ☐ Alumni ☐ No direct association ☐ Other: \_\_\_\_\_

2. How did you find out about this event? (please check all relevant boxes)

☐ Ad in the Phoenix ☐ Digital Signage ☐ Poster ☐ The Exchange ☐ Email ☐ Twitter ☐ Facebook  
☐ Heard about it from a friend ☐ Walked by ☐ Other (please specify) \_\_\_\_\_

**Privacy Notification:**

The contents of this Feedback Form may be made available for public viewing. Any personal information you provide in this Feedback Form is collected under the authority of section 26(c) of the *Freedom of Information and Protection of Privacy Act*. UBC Campus and Community Planning is collecting this information for the purposes of this consultation process. For more information about the collection of your personal information, contact Gabrielle Armstrong, Senior Manager, Consultation, at (604) 822-9984 or by email at [gabrielle.armstrong@ubc.ca](mailto:gabrielle.armstrong@ubc.ca)

**Thank you for taking the time to provide your feedback.**

If you would like to drop off, email or mail in this feedback form, please return it by end of day, **November 13, 2016** to:

Campus and Community Planning, UBC, 2210 West Mall, Vancouver, BC V6T 1Z4  
Attention: **Gabrielle Armstrong, Senior Manager, Public Engagement**  
For further information, please contact [gabrielle.armstrong@ubc.ca](mailto:gabrielle.armstrong@ubc.ca) or (604) 822-9984



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The University of British Columbia would like to acknowledge the work carried out by the UBCO Leadership Team, Technical Working Group and Urban Systems' consultant team, in the development of the *UBC Okanagan Integrated Rainwater Management Plan (IRMP, 2017)*.

The *IRMP* was developed from 2016-2017 by Urban Systems' interdisciplinary consultant team in collaboration with UBC. It was developed to support the *UBC Okanagan Campus Plan (2015)* and *UBC Okanagan Whole Systems Infrastructure Plan (2016)* by providing an update to the *2011 Stormwater Master Plan*. The *IRMP* responsibly manages the rainwater that falls on campus in a way that respects natural hydrological processes, protects existing environmental values, and manages risk.

## CONSULTANT TEAM

### Urban Systems

- \* **Glen Shkurhan**, Senior Engineer and Principal - **Project Manager**
- \* Elizabeth Balderston, Landscape Architect
- \* Jeff Rice, Water Quality & LID Advisor
- \* Glen Zachary, Senior Modeller
- \* Scott Shepherd, Life Cycle Costs Specialist
- \* Graeme Hayward, Environment & Ecology
- \* Margarita Houston, Wetland Specialist
- \* Christina Hopkins, Junior Modeller

### Piteau Associates

- \* Remi Allard, Soils & Hydrogeology

## LEADERSHIP TEAM

- \* Michael White, AVP, Campus & Community Planning
- \* Rob Einarson, AVP, Finance and Operations
- \* **Anthony Haddad**, Director, Campus Planning & Development - **Project Sponsor**
- \* **John Madden**, Director, Sustainability & Engineering - **Project Sponsor**
- \* Gerry McGeough, Director, Campus Planning & Design
- \* Shelley Kayfish, Director, Campus Operations & Risk Management

## TECHNICAL WORKING GROUP

- \* **Doug Doyle**, Associate Director, Infrastructure + Service Planning - **Technical Lead**
- \* **Leanne Bilodeau**, Associate Director, Sustainability Operations - **Project Lead/Manager**
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- \* Guy Guttman, Manager, Building Operations & Services
- \* Dean Gregory, Landscape Architect, Campus Planning & Design
- \* Cherie Michels, Advisor, Campus Operations & Risk Management



**a place of mind**

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