UBC Sustainability Scholars Program 2019

The UBC Sustainability Initiative (USI) is pleased to offer current UBC graduate students the opportunity to work on funded sustainability internship projects. Successful candidates work under the mentorship of a partner organization, and are immersed in real world learning where they can apply their research skills and contribute to advancing organizational sustainability goals.

For more information about the Sustainability Scholars Program and to apply to work on this project, please visit the Student Opportunities page.

Please review the application guide (PDF) before applying.

Applications close **midnight Monday February 25, 2019**.

Research project title: Exploring alternative delivery models for public realm green infrastructure establishment and maintenance.

Research supports the following City of Vancouver policies -

- ☒ Greenest City Action Plan
  - Goal 1: Green Economy - exploring the potential for developing regional green jobs
  - Goal 6: Access to Nature – improving access to green spaces – like parkettes and boulevards featuring vegetated Green Infrastructure
  - Goal 8: Clean Water – reducing combined sewer overflows and treating stormwater runoff
- ☒ Healthy City Strategy
  - Making ends meet and working well: access to healthy employment opportunities with hiring through social enterprise endeavors
  - Environments to thrive in: ensuring a healthy urban environment by increasing local biodiversity and reducing environmental toxins in stormwater runoff
- ☒ Renewable City Action Plan
  - Enhance and accelerate the development of complete streets and Green Infrastructure
- ☒ Other: Biodiversity Strategy
  - Support biodiversity within parks, streets, and other City-owned lands – by creating and maintaining rain gardens on street edges
  - Celebrate biodiversity through education and stewardship – by engaging volunteers to plant and maintain Green Infrastructure gardens
- ☒ Vancouver Citywide Integrate Rainwater Management Plan
  - Reduce rainwater runoff, clean rainwater, reduce urban heat island, and increase green space

Outline scope of project and why it is of value to the City of Vancouver and describe how and when the scholar's work will be actionable

Scope of work:

The basis of this project is to conduct a Green Infrastructure (GI) establishment & maintenance benchmarking study with a focus on alternatives beyond the traditional city staff/private contractor

approach. This study will aim to help the city develop a maintenance program and potential delivery models for various GI asset types on public realm.

The City owns and is installing a number of public realm GI assets that can be broken down into the following typologies:

1. Swales – enhanced grass swales, bioswales
2. Bioretention – bioretention bulges, bioretention cells/gardens
3. Permeable Pavements – permeable concrete pavers, pervious concrete, porous asphalt, grid pavers/country lanes, permeable rubber
4. Stormwater Tree Trenches – soil cells and structural soils
5. Subsurface Infiltration – infiltration trenches, dry wells/soakaways, chambers, arches, modular systems

Like all infrastructure, green infrastructure practices require maintenance to ensure that they continue to function properly. As implementation of these practices continues to grow, it will become more important than ever to effectively address the resulting challenges of operating and maintaining these practices so that they continue to function properly.

This benchmarking study will aim to explore alternative service delivery models, including but not limited to social enterprises, neighborhood adoption programs, and educational curriculum connections and care. Some aspects of operations and maintenance associated with Green Infrastructure represent a new type of work currently not done by the City. Other North American jurisdictions have leveraged this new work to provide training and job opportunities for youth and other disadvantaged populations. These opportunities in Vancouver should be explored.

The scholar will be completing the following tasks as part of their project scope:

- Undertake a literature review of studies that evaluate the benefits of community involvement in GI establishment and maintenance.
- Gather information from other municipalities on alternative operations and maintenance programs, with a focus on cities and municipalities within our region (Pacific Northwest), and with additional select reviews of cities in North America.
- Provide a complementary summary of current delivery models used for GI landscape establishment in the municipalities surveyed above. Who is involved in the planning, design, and installation process beyond the city scope?
- Explore current deficiencies in local GI maintenance workforce and opportunities for skill development and improvement.
- Consider strategies for improving outreach and overcoming community engagement barriers.

<u>Why this work is of value:</u>

By investing in green infrastructure, the City can proactively prepare for climate change impacts, improve resilience to storms, support biodiversity and ensure cleaner urban run-off to our surrounding water bodies.

With identified limitations of capital funding for operations and maintenance, this work will provide creative solutions for a multiple-win, cost-savings approach.

Education about GI is also essential for its success. GI is an emerging field, and is new to many professionals, and unfamiliar to most residents. It is therefore especially important to raise public awareness through stewardship about why rainwater management matters, the many benefits of using GI tools, what those tools look like, and how people can get involved.

Deliverables

The Greenest City Scholar will deliver a final report containing a summary of their completed work. The report must be completed in Microsoft Word and should be no more than 20 pages, with any additional content included as appendices. The report will be complemented by a final presentation to key stakeholders. The report should include:

- A summary of the alternative delivery models used for GI establishment & maintenance in other cities and municipalities.
- Recommendations for the City on applicable service delivery models and pilot opportunities.

Time Commitment

- This project will take **500** hours to complete.
- This project must be completed between April 29 and August 12, 2019
- The scholar is to complete hours between Monday-Friday, 8am-5pm, for approximately 30-35 hours per week.

Skill set/background required/preferred

☒ Excellent research and writing skills
☒ Demonstrated interest in green infrastructure or stormwater management
☒ Strong technical writing skills
☒ Familiarity with research methodologies and survey techniques
☒ Strong presentation and public speaking skills
☒ Strong analytical skills
☒ Ability to work independently
☒ Demonstrated time management skills
☒ Deadline oriented
☒ Project management and organizational skills
☒ Familiarity with benchmarking methods and tools

Additional Skills Required/Preferred:

☒ Proficiency in Microsoft Word and Excel is required
☒ Comfortable conducting in person or telephone surveys
☒ Particularly suitable for a student in the Planning, Environmental Studies, Landscape Architecture, or Engineering, but recruitment should be open to other departments.

Additional Project Needs

- The scholar may accompany Branch staff to construction sites. Any necessary personal protection equipment will be provided by the Branch, with the exception of steel-toed boots.

Applications close **midnight Monday February 25**.

Apply here:
https://sustain.ubc.ca/student-opportunities

To learn more about the program here:
https://sustain.ubc.ca/ubc-sustainability-scholars-program

Read the application guidelines to confirm your eligibility to participate in the program here:
https://sustain.ubc.ca/student-opportunities

Contact Karen Taylor at sustainability.scholars@ubc.ca if you have questions.