

## Summer 2025 Sustainability Scholars Program Internship Opportunity

The UBC Sustainability Hub is pleased to offer current UBC graduate students the opportunity to work on sustainability internship projects. Successful candidates work under the guidance of a mentor from the partner organization, and are immersed in real world learning where they can apply their research skills and contribute to advancing sustainability across the region. The pay rate for the summer 2025 program is \$31.25/hour or \$7,812.50 for a 250-hour project.

- Visit the [Sustainability Scholars Program website](#) to learn [how the program works](#) and to [apply](#).
- Be sure to review the application guide on the Apply page to confirm your eligibility before applying.

**Applications close at 11:59 pm on Sunday January 26, 2025.**

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### **Project title: Assessing base-flow augmentation options for high-risk creeks and streams (City of Coquitlam)**

#### **Project Background & Overview:**

Creeks are an important environmental asset in the City of Coquitlam's system of parks, trails and cultural facilities. The City has over 300 kilometers of creeks and streams that are home to fish and other aquatic habitat, and it plays a significant role in the broader Coquitlam ecosystem and drainage system.

Base flow augmentation is critical for a healthy and resilient riparian ecosystem by providing a slow and continual release of collected runoff and groundwater year-round. The benefits of base flow augmentation have become even more important with the growing impacts from climate change in Metro Vancouver. Hotter, drier summers result in increased periods of drought. Milder winter weather has seen a decline in mountain snow pack, and warmer spring months melt the snow pack earlier; overall, leading to a decline in base flow in summer months.

This project works towards the City's Environmental Sustainability Plan, which contains several relevant goals: to improve ecological conditions of natural areas (e.g., forests, streams, wetlands, meadows) for the community and wildlife; and to use an integrated approach to storm water management that provides flood protection while protecting ecological health. Environmental Sustainability is a key priority in the City's Corporate Strategic Plan, and an identified action is to continue an in-stream works program to mitigate flooding and enhance aquatic habitat.

With creeks and streams facing increasing pressures from climate change and urbanization, it is paramount that the health of these waterways is maintained and enhanced. As such, base flow augmentation is an actionable tool to realize these goals by improving the resiliency of riparian ecosystems through the enhanced magnitude and permanence of base flows in creeks.

## **Project description**

The purpose of the project is to provide the City of Coquitlam with recommendations for prioritized base flow augmentation solutions for high-risk and high value creeks in the City.

The Scholar's research and final recommendations will support the City's future work for two groups: Engineering & Public Works and Parks Planning and Design.

From an Engineering & Public Works perspective, base flow augmentation supports watershed health that is regularly measured and reported, is currently implemented per the list below, and this research would review and rank base flow augmentation options to support optimization of future investments in expanded base flow augmentation:

- Upstream dam and controlled release (Coquitlam River, via the Coquitlam Dam)
- Groundwater well (Maple Creek via the Maple Creek Pump Station)
- Groundwater recharge (citywide, via boulevard infiltration galleries, protection of riparian areas, and encouragement of low-impact development with permeable surfaces)
- Larger 'community scale' base flow augmentation tanks (north east Coquitlam, typically storing and providing controlled release for up to 20-25 days)
- Water quality and detention ponds (mostly north east Coquitlam)
- On-site detention (citywide, via detention requirements for development applications)
- Existing groundwater protection (bylaw prohibition of groundwater discharge into the City sanitary or storm system)

From a Parks Planning and Design perspective, there is interest in understanding how two different functions (i.e., a park for recreation and leisure, and a base flow augmentation facility for improved ecological resilience) can be co-located to maximize the benefits and services of both.

The recommendations for base flow augmentation will be especially important in developing neighbourhoods of the City where waterways are in close proximity to substantial land use changes and at high-risk of a decline in stream health.

## **Project scope**

The project will primarily involve desktop research utilizing current promising practices on the subject matter.

The Scholar will research, compare and recommend approaches to provide base flow augmentation for high-risk and high value creeks in Coquitlam. More specifically, the Scholar will:

- Review the City of Coquitlam's current states and practices around watershed management with an emphasis on base flow augmentation (see Coquitlam's existing [Integrated Watershed Management Plans](#))
- Research 3-5 other relevant municipalities' watershed management practices, with an emphasis on base flow augmentation

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- Conduct a SWOT evaluation on the different types of base flow augmentation facilities (noting that some of the recommendations could be site/creek-specific)
  - Review best practice and industry current trends
  - Identify opportunities and challenges
  - Consider potential costs (capital and operating)
  - Provide a decision making matrix
- Provide options and best recommended approach for the City of Coquitlam

The Scholar will work with a mentor (senior staff) at the City throughout their research.

## **Deliverables**

- A final report containing a summary of the work completed
- A final report for the online public-facing [Scholars Project Library](#).
- Presentations to City Staff:
  - Early findings presentation to the Project Team
  - Draft final presentation to the Project Team
  - Final presentation to Senior Leaders

## **Time Commitment**

- This project will take 250 hours to complete
- This project must be completed between May 1 to August 15.
- The Scholars is to complete their hours between 8 am and 5 pm, Monday to Friday, approximately 17 to 20 hours per week.
- The Scholar will have the opportunity to attend relevant team and/or City Staff meetings.

## **Required/preferred Skills and Background**

- Excellent research and writing skills
- Demonstrated interest in sustainability
- Familiarity with research methodologies and survey techniques
- Strong analytical skills
- Ability to work independently
- Deadline oriented
- Project management and organizational skills
- Familiarity with benchmarking methods and tools
- Experience with financial modelling and analysis
- Criminal Record Check required [to be coordinated with the project mentor once candidate selection is complete]
- Demonstrated interest in and knowledge of watershed planning and management.
- Familiarity with principles and practices to do with base flow augmentation would be a plus.

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Applications close at **11:59 pm Sunday January 26, 2025**

Apply here: [Click here to apply](#)

Contact Karen Taylor at [sustainability.scholars@ubc.ca](mailto:sustainability.scholars@ubc.ca) if you have questions

## Useful Resources

We are holding a special **resume preparation workshop for prospective Scholars** on January 21, 2025.  
[Click here for details and to register.](#)

Below are some links to useful resources to help you with your resume and cover letter (there are many more online). Some of these resources also provide information on preparing for your interview.

<https://students.ubc.ca/career/career-resources/resumes-cover-letters-curricula-vitae>

<https://www.grad.ubc.ca/current-students/graduate-pathways-success>

<https://www.grad.ubc.ca/cover-letter-cv-resume-templates-ubc-career-services>