Summer 2023 Sustainability Scholars Program Internship Opportunity

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 sustainability across the region.

- 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 midnight on Sunday January 29, 2023.

Project title: Developing a strategic zero-emissions vehicle plan for the City of New Westminster to support Multi-Unit Residential Building (MURB) residents

Project Background & Overview:
In 2019, City of New Westminster Council declared a climate emergency and committed to taking bold action to achieve the greenhouse gas reductions required to keep global temperature increases below 1.5°C. As part of the City's ongoing efforts to reduce its impact on climate change, the City developed a Community Energy and Emissions Plan (CEEP) in 2011. This plan has now been updated (CEEP 2050) and sets a roadmap for reducing community energy consumption and GHG emissions over the next 30 years. Additionally, the City adopted the 7 Bold Steps, which created climate action goals in specific areas (e.g., corporate emissions, mode share, vehicle emissions, etc.). The 4th Bold Step is "Pollution Free Vehicles" targeting 50% of the kilometres driven by New Westminster registered vehicle owners to be by zero emissions vehicles by 2030.

CEEP 2050 indicates that currently 47% of the total GHG emissions are from the transportation sector, and this project is aimed at tackling these emissions in pursuit of our Bold Step 4 target. Although the City of New Westminster has in place an EV Ready Bylaw requiring all new construction MURBS to be 100% EV ready, access to EV charging in existing MURBS remains a challenge.

Project description
EV/PHEV owners are facing difficulties charging their vehicles due to insufficient infrastructure of publicly available charging stations, and city limitations to financially support rapid network expansion. This is an issue for any EV owner but it becomes more evident for those without access to an at-home charging device. Most (older) MURBs have insufficient power supply to support onsite EV chargers and high costs associated with upgrading electrical service/panels are a huge barrier to EV charger installation in MURBs. According to the Census 2021 survey results, 70% of the City's population resides in MURBs which is significantly high compared to neighbouring municipalities (e.g., City of Surrey (25%), City of Burnaby (53%), and City of Coquitlam (36%)). However, most MURB residents in New West are unable to charge their cars on the building property and they're left with no option but to charge their cars at public charging stations.

This becomes another barrier to owning a zero emissions vehicle for MURB residents and hence it becomes one of the highest potential barriers to achieving the emission reduction goal stated in the City's Bold Step 4.

Some of the commonly known issues are:

- One hour of charging (Level 2) allows vehicles to travel 28 – 35km for EVs and 15 – 25km for PHEVs. If an average passenger vehicle is driven 15,000 - 20,000 km per year, an EV will require about 8.2 - 15.4 hours of charging every week. Many charging stations limit the maximum hours of charging to 2 and/or the rate increases beyond the first 2-3 hours. This means an EV owner needs to charge his/her car either every day or more than once a day for a few days a week.
- However, currently there aren't many public charging stations in New West (25 x Level 2 & 2 x Level 3 according to ChargeHub). For MURB residents who have no access to onsite chargers, it is extremely challenging to maintain an EV.

A strategic EV Charging plan specifically drawn for MURB residents is needed for the City to achieve 2030 GHG reduction goal.

Project scope

- Review of best practices related to EV charger installation support programs and policies for MURBs in North America
    - desktop review of a minimum of 3 jurisdictions for policy and incentive programs
    - desktop review of a minimum of 1 electric utility for infrastructure support
- Identify 2 case studies having successfully completed EV charger retrofits in a MURB including one in New Westminster (City staff will support identification of a New Westminster MURB).
- From best practice review, identify challenges/barriers to EV charger installation in MURBs in New Westminster (e.g., cost implications, legislations, etc.)
    - The City will provide information regarding the size, age and locations of MURBS in New Westminster
    - Challenges/barriers should be localized to New Westminster based on available building archetype data.
- Engage / interview with 1 local-based engineering firm to get a technical understanding of the typical process and costs (engineering, building upgrades, etc.) associated with making an existing MURB (Strata & Rental) EV-friendly.
    - Using building achetype data, select a specific building type to use as a case study to guide the interview.

Deliverables

- Interim report, including a summary of best practice review findings, highlighting policies, programs, incentives and challenges.
- Final presentation to the City staff
- A final report for the online public-facing Scholars Project Library containing a comprehensive overview of the best practice findings which are then positioned within the New Westminster local context.
    - This report should highlight potential challenges/barriers faced by MURBS and identify supportive tools and communications that can be prepared by the City to address them.
    - This report will provide an understanding of which MURB archetype is most likely to be impacted by which type of barrier/challenge, and therefore provide an assessment of how widespread that barrier/challenge is.

Time Commitment

- This project will take 250 hours to complete
- This project must be completed between May 1 to August 15, 2023
- The Scholar is to complete hours between 9 am and 5 pm, Monday to Friday, approximately 17 to 20 hours per week.

Required/preferred Skills and Background

☒ Excellent research and writing skills
☒ Demonstrated interest in sustainability
☒ Familiarity with research methodologies and survey techniques
☒ Excellent public speaking and presentation skills
☒ Strong analytical skills
☒ Ability to work independently
☒ Deadline oriented
☒ Project management and organizational skills
☒ GIS training or experience.
☒ Experience with financial modelling and analysis
☒ Familiarity with or interest in EV charging, EV charging infrastructure, EV charging technologies, an asset.
☒ Experience reviewing and analysing public policy, an asset
☒ Understanding of electric vehicles and charging technologies, and awareness of electrical utility distribution would be an asset.

Applications close **midnight Sunday January 29, 2023**
Apply here: Click here to apply
Contact Karen Taylor at sustainability.scholars@ubc.ca if you have questions

Useful Resources

We are holding a special **resume preparation workshop for prospective Scholars** on January 23, 2023. 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