Summer 2022 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 to confirm your eligibility before applying.

Applications close at midnight on Sunday January 30, 2022.

Research project title: Developing a High Injury Network: Analyzing collision data to identify priority locations for road safety improvements within the City of Vancouver

Project Background & Overview:

The City of Vancouver is interested in developing a High Injury Network as a component of our Vision Zero road safety strategy. Vision Zero is a philosophy of road safety that is being adopted by major cities around the world, which aim to achieve a goal of zero traffic-related fatalities and serious injuries. High Injury Networks are a tool to map out street intersections and corridors with high severity collisions, so that they can be targeted for road safety improvements.

Traffic collisions are a leading cause of injuries and death worldwide. In Vancouver, traffic related fatalities and serious injuries have a disproportionate impact on individuals utilizing active modes of travel. Pedestrians and cyclists represent 65% of the traffic-related fatalities and 60% of the serious injuries, while only encompassing 35% of the trips. Understanding these patterns is vital to minimizing the risks of active travel and encouraging Vancouver residents to choose to walk, cycle, or roll. One of the City of Vancouver's Climate Emergency goals is to ensure that walking, cycling and transit is used for two-thirds of trips within Vancouver by 2030. To reach this goal it is crucial that road users of all ages and abilities feel safe choosing active modes of travel.

Traffic related injuries and fatalities may also have a disproportionate impact on marginalized communities. In Vancouver, for example seniors account for 40% of the fatalities and 22% of serious injuries, while only representing 14% of the population. However, the impacts when it comes to other disproportionally impacted groups (e.g. minorities, indigenous, low income, people with limited knowledge of English, among others) has not been reviewed to determine if they are overrepresented . Members of these communities may be less likely to own a personal vehicle and may be more likely to use active modes of travel. An additional piece of this project would be integrating the High Injury Network with existing City of Vancouver equity data. This would help us distribute road safety improvements more equitably within Vancouver.

Project description

The purpose of this project is to help the Traffic and Data Management Department gain a better understanding of where high severity collisions are occurring. Mapping high severity collisions will help us determine which corridors within the City should be prioritized for improvements.

After completing this exercise other cities have found that a disproportionately high number of collisions are occurring on a relatively small percentage of their street networks. Some cities use this data to prioritize streets for road safety improvements. For example, the City of Los Angles uses their High Injury Network to focus on improving safety at Priority Corridors and Intersections, which have the highest concentrations of traffic deaths and severe injuries.

The City of Vancouver's current model for improving road safety relies heavily on resident feedback to determine which streets need upgrades. This method has the downside of being somewhat subjective, and not completely equitable. Marginalized communities may be less likely to present their concerns to the City, and so less likely to receive infrastructure improvements. A High Injury Network would allow the City to objectively target streets for improvements, and focus on upgrades that are the most critical for improving pedestrian and cyclist safety. Creating an environment that is safe and comfortable for pedestrians and cyclists will encourage active travel and help us meet our Climate Emergency goals.

Project scope

The scholar will create a High Injury Network map to help the Traffic and Data Management Department identify key street corridors to target for future road safety improvements. This task will involve locating and mapping segments of the road network where many high severity collisions have historically occurred. Collisions involving pedestrians and cyclists should be particularly emphasized.

The scholar will draw from ICBC, VPD, and local hospital data to create the High Injury Network. The scholar will use GIS software to map the locations of high severity collisions, and determine the street corridors which are the most critical to prioritize for upgrades. A brief overview of the tasks to be completed as a part of the project scope is as follows:

- Conduct a jurisdictional review of best practices in developing High Injury Networks and integrating them within existing municipal equity frameworks
- Review existing traffic collision data sources available to the City of Vancouver, from partners such as ICBC, the VPD, and local hospitals
- Use GIS software to map serious-injury and fatal collisions onto Vancouver's street network
- Analyze data and identify street corridors with high concentrations of serious-injury and fatal collisions
- Create map displaying the most dangerous corridors for pedestrians, cyclists, and drivers
- Identify gaps in network and locations where safety improvements should be prioritized over the next 5-10 years
- If time permits, integrate the High Injury Network map with the City of Vancouver's equity data and investigate whether marginalized communities are disproportionately impacted by serious-injury and fatal collisions
- If time permits, identify schools which are located on the High Injury Network and/or the equity maps, and create a list of locations to be prioritized for safety improvements

The scholar will produce a database and map which can be used to prioritize safety improvements for the next 5-10 years. This will enable the City of Vancouver to focus road safety improvements on the most critical locations, so that everyone in our community can safely enjoy active modes of travel.

Deliverables

- A final report and presentation containing a summary of the work completed. Including a jurisdictional review, a description of the methodology used, and recommendations for future work
- A High Injury Network developed by the scholar
- A final report (or executive summary) for the online public-facing Scholars Project Library.

Time Commitment

- This project will take 250 hours to complete.
- This project must be completed between May 2, 2022 and August 12, 2022
- 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
☒ Statistical analysis
☒ Strong analytical skills
☒ Ability to work independently
☒ Deadline oriented
☒ GIS training or experience.
☒ Familiarity with benchmarking methods and tools
☒ Comfortable working with spatial data

Applications close **midnight Sunday January 30, 2022**
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 19. 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