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| VIU acronym_and text | | **Advanced Diploma in GIS Applications**  **Practicum Opportunity Summary** | | |
| Project | Title: | Walley Creek Outfall Assessment | | |
| Organisation: | Nanaimo & Area Land Trust (NALT) | | |
| Location: |  | | |
| Sponsor | Name: | Dave Cake | Title: |  |
| Email: |  | Phone: |  |
| Project Overview | The Nanaimo & Area Land Trust (NALT) mission is to support, promote and protect the natural values of land and water in our area. We are best known for leading the community efforts to secure the land that is now known as Cottle Lake Park (City of Nanaimo) and Mount Benson Regional Park (Regional District of Nanaimo, RDN). The objective of this student project is to consider the characteristics of the land surface being serviced by catch basins and subsequently discharged into Walley Creek. Walley Creek is in the Hammond Bay area of North Nanaimo. | | | |
| Task Summary  (Types of work involved) | The primary goal is to investigate available data and appropriate methods for addressing this question. Project tasks may include:   * Download and integrate hydrology features, storm drain infrastructure, LiDAR elevation data * Determine the extent of land which drains into each catch basin or storm drain using DEM and flow accumulation modeling * Use connectivity of underground services to determine which catch basins are connected to which outfalls. Result is a “watershed” for each outfall in the creek. * Use remote sensing methods, potentially trying out several image options, to determine impervious surfaces (e.g., road, parking lot, structures), and potentially to determine land cover (e.g., forest, wetland, developed) * Quantify effectiveness of classification techniques used * Develop metrics for each outfall watershed, for example area drained, proportion impervious, proportion natural state, etc. * Prepare cartographic outputs to summarize results * Document the process (e.g., methods with best results, time expended on tasks, etc.) such that someone could apply this process to other watersheds in the region in future * Depending upon student interest, include investigation of automation methods to make running a similar process elsewhere faster and more consistent * Time permitting, apply methods to other priority watersheds | | | |
| Additional Information  (Appealing Aspects) | A chance to learn about a wide variety of techniques and datasets, including LiDAR, municipal infrastructure, hydrological modeling.  A well-supported practicum project, working directly with ADGISA faculty | | | |
| Funding | None  Minor (< $3,000)  Major (>$3,000) | | | |
| Workplace | Off-site  Full-Time On-Site  Other/Mixture  Description (if Other): | | | |
| Student Selection | Faculty Selection (Student with highest grades selected from among those interested)  Shared Selection (Faculty and Sponsor make selection based on discussion of interested students)  Sponsor Competition (Sponsor interviews, in-person or via telephone, and selects from interested students) | | | |

*For assistance or further information, please contact: David Cake*

*(250) 740-6153*

[*Dave.Cake@viu.ca*](mailto:Dave.Cake@viu.ca)