GREENEST CITY SCHOLARS PROGRAM
UBC Sustainability Scholars Program, Summer 2018

Benchmarking study of sports field turf irrigation and manual irrigation systems

Research supports the following policies -
Greenest City Action Plan

- Specific goal area (s): Clean Water: Reduce per capita water consumption by 33% from 2006 levels

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

- Undertake a literature review of sports field irrigation management practices, benchmarking, water use intensity, and existing management plans.
- Analyse available water meter and irrigation scheduling data to benchmark actual water use in Park Board sports fields.
- Conduct field work to gather water use data on unmetered manual irrigation at various sites and compare to alternative installed/automated systems
- Conduct informal interviews with Park Board operations staff to gather knowledge about irrigation principles, practices, and to elicit input on water management plan development.
- Develop a volume based water use plan for sport field turf irrigation.

Why this work is of value:

- Metro Vancouver has updated their Drinking Water Conservation Plan (formally called the Water Shortage Response Plan) to allow irrigation of turf sports fields using an outcome based approach as opposed to the previous prescribed water schedule approach. This research project will provide the necessary inquiry, data analysis and benchmarking to form the basis of the outcome based water management plan. Outcome based water management plans allow flexibility in terms of irrigation during summer months and drought events which can help to prevent damage to turf assets, while ensuring water conservation goals are also met. Furthermore, by benchmarking sport field irrigation, high water using fields can be investigated, which will provide valuable input to implementing efficiency improvements and contribute to meeting water conservation goals.
- Manual irrigation practices are still conducted in various locations around Vancouver including Stanley Park and Queen Elizabeth Park. These practices are known to be time consuming for staff and less efficient in terms of water use, however a specific quantitative study of these practices has not been undertaken to date. The findings of this project will provide a basis for actions aimed to improve irrigation efficiency related manual irrigation practices or replacement with automated/installed alternatives.
- The findings of this study will also inform actions for the Park Board Water Conservation Action Plan (2017-2020).

Submit applications here: http://bit.ly/2DC2jpP1

Deliverables

The Greenest City Scholar will deliver a final public facing report containing a summary of their completed work along with a draft sports field water management plan, complemented by a final presentation to key stakeholders. The report should include:

- Summary of benchmarking analysis and data for water use for sports fields and manual horticulture irrigation
- Summary of current manual irrigation practices data collection and comparison with more efficient systems, including potential water savings through upgrades
- Summary of precedents, best practices and case studies for sports field irrigation management plans found through literature review
- Draft water management plan for turf irrigation of sports fields
- Final report for the UBC Sustainability Scholars online project library

Time Commitment

- This project will take **250*** hours to complete.
- This project must be completed between ***April 27 & August 10***
- The scholar is to complete hours between ***8:30am and 4:30pm, Monday to Friday***, approximately **20** hours per week.

Work location: CoV Engineering – Marine Gateway (450 SW Marine Drive)

Skill set/background required/preferred

- Excellent research and writing skills
- Demonstrated interest in water conservation and management
- Strong technical writing skills
- Strong data processing and analytical skills
- Ability to work independently
- Demonstrated time management skills
- Familiarity with specific software (Excel, Word)
- Familiarity with benchmarking methods
- Experience with statistical analysis
- Good understanding of the principles of water use, efficiency and conservation
- Experience with field work including qualitative and quantitative data collection

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