

Day Two - Track Two

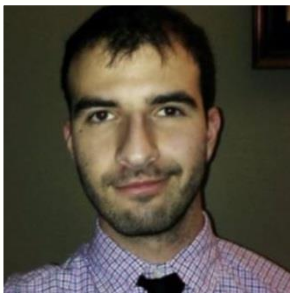
Thursday, March 22nd, 2018

3:00 p.m. – 3:30 p.m.

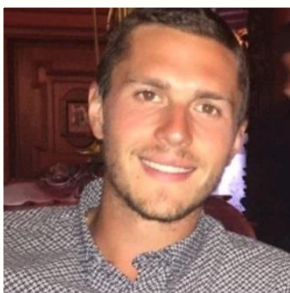
Advances in Technology for Stormwater Quality and Watershed Management Applications

Presenters: Marco Angilletta and Jonathan Antonucci, Environmental Monitoring and Compliance (EMAC)

Biography



Marco Angilletta is the UAV Operator and Instrument Technician at EMAC. He has a BA in Geographic Analysis and a Certificate in Environmental Management. Marco has over 30 hours of UAS flight time and two years of application and regulatory experience. Marco has been involved in the construction industry with a focus on UAS in aggregates and structural inspections.



Jonathan Antonucci is an Environmental Monitoring Equipment Technician for EMAC. Jonathan holds a BES with Specialized Honours in Urban and Regional Environments, and has over 3 years' experience deploying and troubleshooting technology in energy and environmental sectors of industry. His specialized knowledge is in telemetry systems of water quality products and in the applications and deliverable's.

Abstract

Protecting aquatic life while managing the water supply, water quality and storm water runoff helps sustain the distribution of a watershed's resources. To properly design and engineer a system which manages the upstream activities, this can ensure the downstream remains healthy. This presentation will teach users about emerging technology that can be applied to watershed applications which will allow for proactive solutions. Providing valuable real-time data for informed decisions, cost and timesavings, as well as new analytical tools for data will be discussed. Having accurate topographic data plays an essential role to watershed planning. Technologies such as UAS and how it plays into Canadian Regulations, as well as payload capacities for photogrammetric versus LiDAR data will be compared for accuracy. UAS' provide on-going monitoring which includes erosion and sediment control for current data results. The collection of real-time water parameter measurements (temperature, DO, pH, conductivity and chloride, turbidity and water level) and heavy metals (zinc, manganese, cobalt, copper, arsenic, chromium, lead and iron) allows for simplified regulatory compliance reporting and quick response time. Bathymetric surveys will provide subsurface elevation data which would allow for a complete analysis of the watershed to plan accordingly. By integrating these technologies, an engineer can fully understand the parameters of the watershed and begin to plan accordingly.

Learning Objectives

1. Drone applications are evolving as the market becomes more involved. Understanding the regulations about UAS and the payload capacities can depend if a drone is the right tool for the job;
2. There are numerous ways to collect topographic data, however understanding the amount of precision and accuracy needed for watershed management applications will vary depending on the application used; and
3. Collecting real-time and continuous data, such as telemetry systems and hand-held instruments provide a simplified approach to gathering and reporting live data such as water level, quality, and flow.