

Day Two - Track One

Thursday, March 23rd, 2017

9:30 a.m. – 10:00 a.m.

Stormwater Management Facilities Condition Assessments, Inventories and Rehabilitation Prioritization

Presenters: Pippy Warburton and Steven Scott, AECOM

Biographies



Pippy has extensive experience as a Water Resources engineer in Ontario and has completed numerous flood reduction studies as well as Municipal and Provincial Environmental Assessments for surface water related projects. She has specialized in hydrologic and hydraulic modelling, urban flood mitigation, storm water management design, and sewer network modelling and assessment.



Steve has considerable working experience with a variety of GIS (ArcGIS, MapInfo, and Manifold), remote sensing (IDRISI, PCI Geomatica, and ENVI), CAD (AutoCAD, AutoDesk), and database management applications. He is also an experienced land surveyor responsible for small and large scale property boundary surveys, building and construction layouts, topographic (aquatic and terrestrial) surveys, aerial imagery flight-line planning, and road surveys. He also leads field work operations for several monitoring programs as a water quality/quantity field technician with experience working with Acoustic Doppler velocimeters (ADV), YSI water quality sensors, and HOBO data loggers (including rainfall gauges and telemetry stations).

Abstract

Stormwater Management Facilities (SWMFs) are important assets that provide vital flood protection and water quality improvements. The effectiveness of SWMFs declines over time as they fill with sediment or deteriorate in other ways. Detailed inspection information outlines issues requiring immediate repair or attention including erosion, blockages of inlets or outlets, vegetation maintenance, safety concerns (fencing, signage etc.) and structural deficiencies. Regular surveys are used to develop a rate of sediment accumulation and predict when clean-outs will be required. This

information provides municipalities with the information they need to more accurately forecast short and long term budget requirements for these facilities.

The prioritization and ranking of maintenance / rehabilitation requirements for ponds is usually completed based on severity of deterioration and risk to public safety and property. The ranking scheme, evaluation criteria, and criteria weighted based on consultation with the each municipality to ensure alignment with programs and values. Maintenance/rehabilitation prioritization criteria may be categorized into functionality, environmental, safety, social-political, technical feasibility and regulatory aspects. Planning for the work also needs to consider the time frame of the proposed works and the financial/resource requirements to complete the projects. This presentation provides an overview of this subject including examples from AECOM's experiences and will highlight best practices in both inspection as well as rehabilitation prioritization.

Learning Objectives

1. Understanding the history, prevalence and function of SWMFs;
2. Understanding the regulatory regime governing the operation of SWMFs;
3. Discussion of best practices in SWMF assessment and inventory - handheld devices; sediment volume and SWMF efficiency; database development; and
4. Best practices in prioritization - multi criteria decision making using data collected through site assessment; variable values and parameter weights; statistical methods of ranking.