



UNITED NATIONS  
UNIVERSITY

**UNU-INWEH**

Institute for Water,  
Environment and Health



**OCTOBER 8<sup>TH</sup> 2019**

FREE ADMISSION & REFRESHMENTS

FREE PARKING

## Urban-Induced Hydromodification

Urbanization, in general, increases impervious cover in a watershed. When impervious cover is increased, precipitation does not infiltrate as it would naturally. Instead, rainfall is quickly piped and channeled directly to the watercourse. The impacts of increases to impervious cover are evident when comparing stream hydrographs. Rural areas show a gradual response to rainfall, as well as typically having a lower peak flow and extended falling limb. Changes in hydrology as a result of urban development can impact the amount and quality of water reaching a natural feature, as well as the location of different flow paths. Increase in surface runoff from the urbanized areas can result in flooding and erosive damage to our streams and structures such as public and private property. In addition, human activity produces pollution, which in combination with the increased runoff can degrade the quality of our water resources. Practice of managing urban runoff is continuing to evolve as the science of watershed management and understanding of our watersheds grow. Effective management of urban runoff is critical to the continued health of our streams, rivers, lakes, fisheries and terrestrial habitats.

Toronto & Region Conservation Authority (TRCA), as a watershed management agency, develops stormwater management criteria, provides guidance in the planning and design of stormwater management infrastructure for developers, consultants, municipalities, and landowners, and outlines the processes and infrastructure needed to address flooding, water quality, erosion, water balance, and natural heritage. This presentation will discuss about TRCA's stormwater and floodplain management applied within its nine watersheds.

### SPEAKER



Dr. Dilnesaw works as a Senior Water Resources Engineer in the Development and Engineering Services Division at the Toronto and Region Conservation Authority. Dr. Dilnesaw has over 18 years of experience in watershed hydrology, river hydraulics, and soil and water conservation engineering and stormwater and floodplain management. His expertise includes assessing environmental impact of land development, various hydrologic and riverine hydraulic computer modeling, assessing the impact of climate change on watershed hydrology and developing different modeling guidelines. Throughout his career, Dr. Dilnesaw has published and presented several scientific papers in the areas of soil and water resources management and climate change. He holds PhD and Master's degrees in Hydrology and Soil and Water Resources Management Sciences from Institute for Urban Planning, Land Management and Water Engineering of the University of Bonn, Germany, and Master's and Bachelor's degrees in Agricultural Engineering from Cologne University of Applied Sciences, Germany and Alemaya University, Ethiopia respectively.

**7:00PM @ McMaster Innovation Park (Conference Room 1AB)**

175 Longwood Road South, Hamilton, Ontario

RSVP to [contact.inweh@unu.edu](mailto:contact.inweh@unu.edu)