Stormwater runoff from urban areas is a major source of pollution to surface water bodies. The discharge of nutrients such as nitrogen and phosphorus is particularly damaging as it results in harmful algal blooms which can limit the beneficial use of a water body. Stormwater best management practices (BMPs) have been developed over the years to help address this issue. While BMPs have been researched for years, their use has been somewhat limited due to the fact that much of the data collected is for specific applications and in specific regions. It is unknown how these systems will perform in other regions and for other applications. Additionally, the research was spread across the literature and performance data was not easily accessible or organized in a convenient way. Recently, local governments and the USEPA have begun to collect this data in BMP manuals to help designers implement this technology. In this dissertation presented is the development of methodologies to evaluate the performance of two BMPs, namely green roofs and pervious pavements. Additionally, based on an extensive review of the literature, a model was developed to assist in the evaluation of site stormwater plans for the removal of nutrients due to the use of BMPs. This model is called the Best Management Practices Treatment for Removal on an Annual basis Involving Nutrients in Stormwater (BMPT Arens) model.

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The public is welcome to attend.