
STORMWATER CORE COURSE - *AN ONLINE STORMWATER CURRICULUM*

EXECUTIVE SUMMARY

This project will complete the development of five learning modules in a regional online curriculum to address stormwater management education for early career professionals. The first module has been completed and is hosted as a Moodle on the *eXtension* learning platform. The regional curriculum began with seed grant from the North Central Region Water Network to fund the development of the first learning module. The remaining four modules will be developed in conjunction with a Technology grant from the University of Minnesota Extension. The full curriculum is anticipated to be available online in September 2017. Several opportunities to participate in the planning, development, review and implementation of the curriculum are available.

INTRODUCTION

Excessive stormwater runoff generated when rain or snowmelt events flow over land without infiltrating may cause flash flooding, significant water quality degradation, and loss of property. The primary method of control for stormwater is through best management practices. Additionally, most stormwater discharges are considered point sources which require a permit. Water resource managers and stormwater professionals need to learn how to adopt and maintain proven methods, techniques, and practices to minimize and combat the negative environmental impacts of excessive stormwater runoff.

The *Stormwater Practices and Maintenance Core Curriculum* is an online course being developed to provide training to the new and early career stormwater practitioners and educators. Course participants learn the fundamentals of stormwater science, practices, and management. Through the course they become equipped with the necessary resources and skills for use in stormwater management, construction, maintenance, and other practical applications. The *Stormwater Practices and Maintenance Core Curriculum* ultimately aides stormwater professionals and educators in improving and optimizing their stormwater operations.

THE SOLUTION – *STORMWATER PRACTICES AND MAINTENANCE CORE CURRICULUM*

The online course can be accessed at <http://campus.extension.org/>, by searching for *Stormwater Practices and Maintenance Core Curriculum*. The online course is a publicly available, regionally applicable and comprehensive stormwater training that can be used by stormwater professionals to 1) optimize their stormwater operations, and 2) help them to meet their community's clean water goals. The course is composed of five modules:

1. Introduction & Foundation
2. Stormwater Practices Planning & Selection
3. Specific Stormwater Practices: Life Cycle: planning, siting, design, construction, operation and maintenance
4. Stormwater Practices Construction & Maintenance, and
5. Regulatory Modules

A needs assessment conducted through literature research and local survey (May-July 2013, n=150) confirmed the need for a regionally uniform stormwater fundamentals, practices, and the inspections and maintenance training. A 12 State regional team was formed in 2014 and a detailed logic model was developed to help to secure a \$40,000 seed funding grant from the North Central Regional Network. Module one was completed in 2015 with three chapters. The course has been completed by more than 50 people with participants sharing comments such as: "I would like to use this course for my Junior year engineering students, they don't get this kind of information otherwise" and "This course would have been extremely valuable early in my career"

The development of the first module was a major task and took nearly a year to complete as the process involved establishing regional partnerships, forming the team, developing team roles, developing initial content and outline for all five modules, finding peer reviewers, content experts, pilot testers, local contacts and establishing a promotional plan for the online course. Consequently, a proven and successful process has been established for the development of the remaining modules that will significantly increase efficiencies and lessen the development time. The next four modules are scheduled to be completed by July 2017.

TARGET AUDIENCE

This project will serve stormwater professionals including designers, engineers, landscape architects, contractors, builders and developers, commercial property owners and managers, inspectors, planners and building permit agencies, elected officials, local government managers, seasonal field staff, and educators.

EDUCATIONAL GOALS

The goal of this project is to develop a publicly available stormwater core curriculum platform using regionally uniform content and locally-specific research that can be readily used by educators, local governments and stormwater professionals to optimize their stormwater operations. Course objectives are learner-based, such that participants will:

- learn stormwater basics and gain skills to teach others,
- learn both broad, regionally uniform and local, state-specific content,
- establish networking and local contacts or advocate in small communities through course participation,
- gain a better understanding of multi-state stormwater issues and gaps, and
- increase skills of area Extension professionals in developing online courses with national and regional exposure

FUNDING

A Technology grant from the University of Minnesota has been awarded to the project to develop and produce the remaining modules of the *Stormwater Practices and Maintenance Core Course* including support resources on instructional design and production. This project is led by Shahram Missaghi, University of Minnesota Extension and Katie Pekarek (CO-PI), University of Nebraska-Lincoln.

CALL TO ACTION – WHAT CAN YOU DO?

Stormwater management is necessarily a multidisciplinary field due to the complexity of its nature, therefore the *Stormwater Practices and Maintenance Core Course* needs participation from multidisciplinary, multi-agency, community partners and public sector partners. Course development will require chapter outline reviewers, content developers and writers, video and photo contributors, pilot testers, and early adopters who may use the course in formal university courses, as a primer to a Sediment and Erosion Control class, as a requirement for contractors in an MS4 community, or in other innovative ways.

Do you see a way that you fit into the development of the next modules? Are you wanting to contribute, but you are not sure how? Contact Shahram Missaghi, miss0035@umn.edu, or Katie Pekarek, kpekarek2@unl.edu to become involved.

NEXT MEETINGS

Collaborator Discussion – November 29, 2016 at 1:30pm (electronic meeting via zoom)

<https://nebraskaextension.zoom.us/j/717493251>

Individual Module Planning and Development – December 14, 2016 (electronic meeting via zoom)