



Howard County Watershed Stewards Academy (HoCoWSA)

Syllabus: Certification Course, Fall 2012-Spring 2013

The Howard County Watershed Stewards Academy (HoCoWSA) is a training program to empower residents to improve the water quality of local streams. Stewards become community leaders in reducing harmful effects of polluted stormwater running off into our streams.

The Academy provides Stewards knowledge and expertise from lecturers, training in using watershed assessment tools for analyzing stormwater runoff and hands-on experience installing a solution to a stormwater management problem. A consortium of experienced stormwater management practitioners will provide Stewards with on-going support for their community projects.

The HoCoWSA has been developed by an Advisory Committee with members from University of Maryland Extension-Howard County, Center for Watershed Protection, Howard County Office of Environmental Sustainability and Dept. of Public Works, Columbia Association, Howard County Legacy Leadership Institute for the Environment and the local volunteer community. We have benefitted from the advice and cooperation of the Watershed Stewards Academies of Anne Arundel County and the National Capitol Region. Grant funding to develop this program came from National Fish and Wildlife Foundation and Howard County.

Course Outline (October 2, 2012 – April 6, 2013)

The classes will be on Tuesdays from 6 pm to 9 pm at the University of Maryland Extension Office (3300 N. Ridge Road, Suite #240, Ellicott City, MD 21043). Please note the fieldwork on three Saturdays, mornings and afternoons. The class size will be limited to 25 Stewards.

Session 1, Tue., Oct. 2, Introduction to Watershed Stewards Academy

Session Description: WSA Coordinators will summarize the course, including the Capstone Project and other requirements for certification as a Master Watershed Steward. Faculty will present basic information about the Chesapeake Bay watershed, about water quality of local streams and rivers and how stream health is monitored.

Session Objectives: Stewards will be introduced to the Chesapeake Bay watershed and will gain an understanding of stream health indicators and local stream conditions.

Session 2, Tue., Oct. 9, Watershed Science and Land-Use Change

Session Description: Faculty will present basic watershed science and the effects of land-use change on watershed health, particularly as the changes relates to local conditions.

The impact of impervious cover to watersheds will be further explored through an interactive exercise.

Session Objectives: Stewards will gain an understanding of how our land-use has changed the natural hydrology in our county and how this has adversely affected stream health.

Session 3, Tue., Oct. 16, Introduction to Water Systems and Water Policies

Session Description: Faculty will describe the basics of the Three W's - stormwater, drinking water and wastewater systems - and how these systems interact with one another. Faculty will explain the Clean Water Act and implications for the Bay and will review the overall health of the Bay and its tributaries. Faculty will define and describe watershed plans, Total Maximum Daily Loads (TMDLs) and local Watershed Implementation Plans (WIPs).

Session Objectives: Stewards will gain an understanding of how different water systems affect each other. They will understand how the Clean Water Act is useful for setting targets for reducing water pollution in the Bay watershed.

Session 4, Tue., Oct. 23, Water Pollution Sources

Session Description: Faculty will discuss point and non-point source pollution from residential, commercial and industrial sites. Faculty will describe how to differentiate between dry weather and wet weather pollutions sources, how to recognize illicit discharges and introduce the concept of pollution “hotspots.”

Session Objective: Stewards will learn about pollution sources from various sites. Stewards will differentiate between point and non-point pollution sources as well as dry weather and wet weather pollution sources.

Session 5, Sat., Oct.27, 8 am – 4 pm, Introduction to Soils and Native Plants and Stormwater Tours: An Overview of Problems, Solutions and Lessons Learned

Session Description: Faculty will discuss soil types and how the soil can affect the choice of stormwater management (SWM) projects and design. Faculty will describe how and why native plants are used in SWM projects, and why non-native plants, particularly invasive plant species,

may pose problems. Faculty will lead stewards on tours of several sites that demonstrate problems, solutions and lessons learned about SWM.

Session Objective: Stewards will learn about soils and native plants and threats from non-native invasive plants. Stewards will observe a variety of SWM problems and solutions.

Session 6, Tue., Nov. 6, Pollution Solutions

Session Description: Faculty will discuss the Three P's of solving pollution problems – Prevention, Policy & Practices. *Prevention strategies* described will include pollution source control, nutrient management and infrastructure maintenance (e.g. household, septic). *Policy measures* discussed will focus on local responses to required implementation of the Clean Water Act (NPDES permits, TMDLs and local codes and ordinances). *Practices* described will include on-the-ground restoration strategies and best management practices.

Session Objective: Stewards will learn the application of the Three P's to solve pollution problems.

Session 7, Sat., Nov. 10, 9 am – 4 pm. Assessments

Session Description: Faculty will describe various assessment tools to be used for neighborhoods, hotspots and for a single site. Stewards will break into smaller groups and go out into the community to practice using these site assessment tools.

Session Objective: Stewards will gain familiarity with general techniques for assessing various sites for problems and solutions, with attention to the tools, calculations, and data collection needed. Stewards will practice the assessments and conduct a site assessment as a group at the site proposed for a Class Restoration Project.

Session 8, Tue., Nov. 20, Improving Stormwater Infiltration: Conservation Landscaping and Rain Gardens

Session Description: Faculty will describe two approaches to handling stormwater runoff, conservation landscaping and rain gardens. Faculty will discuss how to 1) assess risks and benefits of each practice, 2) decide which practice is preferred, and 3) design, install and maintain each practice.

Session Objectives: Stewards will learn more about improving stormwater infiltration as a way to mitigate runoff using rain gardens and conservation landscaping.

*****Winter Break*****

Session 9, Tue., Jan. 8, 2013, Introduction to Geographic Information Systems (GIS) and to Project Planning

Session Description: Faculty will present an overview of GIS - what it is, how it works, and why it is helpful. Faculty will assist Stewards as they begin to integrate their newfound knowledge to plan a class project.

Session Objective: Stewards will learn basic GIS and its application for their work. Stewards will use GIS to calculate impervious surface and stormwater runoff for a site under supervision of an instructor. They will continue designing the class project.

Session 10, Tue., Jan. 15, Planning: Class Project Design and Capstone Project Proposals

Session Description: Faculty will review project needs (e.g., permits, county personnel input) the class will choose the best design to implement for the Class Restoration Project. Capstone Project groups will plan their Project Proposals.

Session Objectives: Stewards will understand the basics of project planning and budgeting. Stewards will choose a Class Restoration Project design to implement. Stewards will work on Capstone Project Proposals

Session 11, Tue., Jan. 22, GIS Review and Community Presentations

Session Description: Faculty will guide Stewards in review and practice of GIS skills and techniques. Stewards will give, individually, five-minute presentations about watershed topics.

Session Objective: Stewards will hone GIS skills. Stewards will gain experience in conducting community outreach on watershed issues and will receive feedback from classmates and staff about the presentations.

Session 12, Tue., Jan. 29, Volunteer Experiences, Project Partnerships, and Community Presentations

Session Description: Faculty, including three Howard County watershed volunteers, will discuss the importance of partnerships for completing successful projects, where and how to look for funding and the importance of including stakeholders in project planning. Stewards will give, individually, five-minute presentations about watershed topics.

Session Objective: Stewards will gain understanding of problems they may encounter during their stewardship project. They will gain insight on establishing partnerships, writing grants and

finding funding sources. Stewards will gain experience in conducting community outreach on watershed issues and will receive feedback from classmates and staff about the presentation.

Session 13, Tue., Feb. 5, Marketing Your Knowledge and Skills about Watershed Issues and Introduction to WSA Consortium Members

Session Description: Faculty will describe ways to become successful and effective leaders in your communities. WSA Consortium members will describe their areas of expertise and how they can support the work of Stewards.

Session Objective: Stewards will gain insight into public perception of watershed issues and ways to engage their communities. Stewards will understand what resources the experienced practitioners of the WSA Consortium can contribute to Capstone Projects.

Please reserve Feb. 12 and 19 as “snow days.”

Session 14, Tue., Feb. 26, Capstone Project Proposals

Session Description: In groups, Stewards will describe their Capstone Project Proposals including proposed leadership efforts and strategies for building knowledge, understanding and community partnerships.

Session Objective: Stewards will receive feedback from peers and Consortium members on their Capstone Project Proposals.

Session 15, Sat., April 6, 9 am – 2 pm, (Location to be announced) Class Restoration Project (Rain date, Sat., April 13, 9 am – 2 pm)

Session Description: WSA staff will oversee Stewards as they implement the class project in SWM (e.g., rain garden installation) from plans produced during the course.

Session Objective: Stewards will gain field experience by implementing a SWM project, thus integrating all they have learned throughout the course. Stewards will gain an understanding of the effectiveness of the SWM practice by follow-up monitoring.

Session 16, Late October-November 2013, Capstone Project Showcase

Session Description: Stewards will describe their completed projects to the entire group.

Session Objective: This last session will highlight the completion of the capstone projects. Stewards will receive feedback on the entire project.

Application Process

1. Read the *Applicant Information*, below. A qualified applicant will:
 - Be a resident of Howard County and at least 18 years old.
 - Live within the community he/she represents and be actively engaged in community activities.
 - Be proficient in basic computer skills such as Microsoft Office, internet browsing and be willing to learn new programs.
 - Be able to serve as a community resource for environmental and watershed information.
 - Have experience with public speaking and/or meeting facilitation.
 - Complete the Master Watershed Steward Certification course.
 - Attend class sessions listed above.
 - Complete a Capstone Project.
2. Download the application form from this website, or request an application form by email from HowardWSA@gmail.com.
3. Please direct questions to Howard County Watershed Stewards Academy at HowardWSA@gmail.com or to Barbara Schmeckpeper, HoCoWSA Coordinator, 410-381-5279.
4. Fill out the application form and email to HowardWSA@gmail.com. Alternatively, send the completed form by mail to Sylvia Huestis, HoCoWSA Coordinator, University of Maryland Extension, 3300 North Ridge Road, Suite 240, Ellicott City, Maryland 21043.
5. Ensure that your completed application is emailed or postmarked **no later than September 12, 2012**.
6. An interview is required prior to acceptance into the program. A HoCoWSA Coordinator will contact you to arrange an interview shortly after receiving your application. We will accept applicants into the class until the class is full (maximum of 25 participants).

Cost

Tuition is \$250 per person, due after acceptance into the program. Scholarships are available.

Certification Policy

Requirements for Initial Certification:

- Complete the Watershed Stewards Academy coursework, consistent with the attendance policy, below.
- Complete the Capstone Project.

Requirements for Annual Maintenance of Certification:

- Provide 40 hours of community service for watershed actions similar to those provided during completing of the capstone project.

- Complete 12 hours of continuing education activities.
- Attend Watershed Steward networking opportunities (to be specified).

Attendance Policy

The Academy encourages attendance at all the training classes and field trips. We maintain the following policy for missed classes.

Stewards who miss up to two classes due to pre-scheduled conflicts (as reported to the WSA Coordinators, at the time of interview) or illness/injury/emergency may make up class material as determined by the Academy Coordinators (e.g., by partnering with a Steward who attended a session, by reading background material or by attending a make-up activity). It is the responsibility of the Steward to make up missed classes by contacting another Steward to obtain materials and review coursework. Although we will make reasonable efforts to assist the Steward in make-up of a missed class, this may not always be possible. If a person misses more than two classes, the candidate is unlikely to receive certification at the end of the course. Exceptions to this policy will be handled on a case-by-case basis.

Homework Policy

A WSA participant can expect to have reading assignments, problems to be solved illustrating GIS concepts, and assignments in design of SWM practices. You will be responsible for presenting a short talk about a SWM issue of your choosing.

Class Restoration Project

The class will design, plan and install a stormwater management project.

Capstone Project

Working in small groups, you and your classmates will complete Capstone Projects, incorporating assessment of stormwater problems of the chosen watershed and community engagement to mitigate the problems. Capstone Projects should be completed by August 31, 2013.

Required elements of the Capstone Project:

Explore your Sub-watershed. Perform an assessment in your chosen sub-watershed or neighborhood utilizing the watershed assessment tools presented in Session 7 (Assessments) and GIS mapping applications presented in the coursework (Sessions 9 and 11). Summarize the results of your assessments in your Capstone Project Proposal.

Engage your Community. You and your teammates will engage and educate community stakeholders on relevant environmental issues and possible solutions. Use a variety of outreach efforts tailored to your community's specific demographics and needs. A

minimum of three (3) outreach/education events (employing different strategies) should be part of the Project.

Move to Action. Your team will create and execute a community-based action project chosen from the needs identified in your community assessment. The project will incorporate feedback obtained from community stakeholders through your community engagement activities. Action projects should be focused in at least two areas:

Reduction of Pollution at its Source. Your team will create and execute a strategy for reducing pollutants introduced to the environment in your neighborhood, using the results of your neighborhood assessments and feedback from community engagement events. Each Capstone Project should include one such strategy (i.e. reducing nutrient run-off from pet waste, or fertilizers; reducing pollution from pesticides).

Reduction of Stormwater Runoff. Your team will complete at least three (3) landscaping projects that will reduce or slow the flow of stormwater off developed landscapes. These could include rain gardens, tree plantings, rain barrels or conservation landscapes.

Inclement Weather Policy

HoCoWSA classes will not be held if Howard County Public Schools are closed due to inclement weather.

The three Saturdays of field classes have outdoor components that will be held rain or shine. Participants should arrive for these classes prepared to be comfortable in the outdoors (proper footwear, sunscreen, raingear, water bottles, etc.).

Contacts for More Information

Sylvia Huestis, HoCoWSA Coordinator, HowardWSA@gmail.com.

Barbara Schmeckpeper, Ph.D., HoCoWSA Coordinator, Master Watershed Steward (Anne Arundel County WSA), 410-381-5279 or HowardWSA@gmail.com.