PEJ
Partners For Environmental Justice

Watershed Vocabulary

A **watershed** is an area of land where water drains into a larger body of water. A **floodplain** is an area next to a creek or river that floods. Pollution originating from a single and identifiable source is called **point-source pollution**. Pollution that is not originating from a single source is called **nonpoint-source pollution**. The **One Water approach** envisions managing all water in an integrated, inclusive, and sustainable manner to secure a bright and prosperous future.

Introduction

The WCWLN Participants met on October 9th, at the Walnut Creek Wetland Park in Raleigh. Despite the heavy rains and flash flood warnings for Wake County, we were still able to proceed with class. It was a coincidence that we were discussing the following topics: Watershed Basics & Urbanization, Floodplain Management Strategies, and Green Infrastructure Overview & Tour. We had a very informative session with all of our presenters. We also had the pleasure of touring the green infrastructure (GI) in front of the Wetland Park led by Amin Davis, PEJ Board Member, and Sarah Waickowsi, Stormwater Engineer with NC State University. During this brief tour participants were able to see how permeable pavement, bioretention areas and cisterns function to capture and treat stormwater.

Image 1. Amin Davis (center) explaining the green infrastructure practices outside of the Walnut Creek Wetland Center. All photos courtesy of Aniya Bourne.

Image 2. Amin Davis showing the stormwater at the outlet pipe collected from the treatment train of green infrastructure practices in the front of the Wetland Center.

Green Stormwater Infrastructure

Sarah Waichowski, P.E., Extension Associate with NC State University's Stormwater Engineering Group, presented about the importance of Green Stormwater Infrastructure (GSI) for using the natural and built systems to manage local water cycles. The goal of GSI is to reduce and treat stormwater runoff and improve the community livability. Examples of GSI practices are: bioretention cells/rain gardens, rainwater harvesting/cisterns, downspout disconnection, planted trees, permeable pavement, green roofs, constructed stormwater wetlands, and streambank repair.

Image 3 & 4. Sarah Waichowski (striped shirt) talking about GSI with WCWLN participants.

Floodplain Management

Wayne Miles, P.E., is the Stormwater Program Manager for the City of Raleigh. His team manages the stormwater system in Raleigh, which consists of stormwater inlets, pipes, streams, lakes, and dams. Wayne presented the importance of floodplain management, to work smarter with the use of technology, policy, and personally track flooding to protect people and the natural environment. The City of Raleigh is actively helping residents who live along the flood prone areas, a new floodplain regulation has been approved; these

changes limit development in the floodplain and will go into effect April 2022 after federal floodplain maps are updated.

Wayne introduced us to three flood tracking applications that can be tracked through your phone or desktop these include; iMAPS, North Carolina Flood Risk Information System (FRIS), and North Carolina Flood Inundation Mapping Network (FIMAN). iMAPS is an online interactive mapping application developed by the Wake County GIS and Raleigh GIS used to provide easy access to reliable property information. By turning on the flood prone soils and flood hazard areas, we can access the areas that are at risk. FRIS offers flood hazard data, models, maps, and risk assessment and reports that are all based on data collected. FIMAN website provides real-time data on stream elevation, rainfall, and weather parameters over 550 gages, these gages are based on the NC Division of Emergency Management and U.S. Geological Survey. To check to see where the flood prone area are used, access these websites below:

iMAPS: https:maps.raleighnc.gov/iMaps/index.html

FRIS: https://fris.nc.gov/fris/Home.aspx?ST=NC

FIMAN: https://fiman.nc.gov/#

Image 5 & 6. Wayne Miles from the City of Raleigh explaining floodplain management.

NKM Reflections from Module 3

NKM Reflections address the following questions, 1) What did you NOTICE today?, 2) What are you KEEPING? and 3) What will MOTIVATE you to continue the journey? Each WCWLN participant fills out these reflections after each module. Below are some of the reflections from our participants.

What did you NOTICE today?

- "I didn't even know permeable pavement existed! I also noticed that there's lot of resources to further educate myself and others on flooding!".

- "These infrastructure and policy approaches have direct relevance to what's happening right now and what's happening recently in the community".

- "The City of Raleigh has many initiatives in place to hold property owners accountable for renting out areas that are in the floodplain".

What are you KEEPING?

- "Knowledge about green infrastructure, what I can do in my own backyard, and mitigating stormwater runoff.

- "Flood Risk Information System (FRIS)- maps to check flood zones are helpful. I checked my house and my boyfriends. I will share about this ".

- "It'll prevent me from buying property in a flood prone area, which will save me a headache in the future".

What will MOTIVATE you?

- "Helping people learn like I am. There's so many things in the program I didn't know about, and I want to be able to share with many".

- "Lots of information I look forward to getting more familiar with, I hadn't realized how relevant this was to the area I live ".

- "The law in Raleigh about not being able to build on floodplain areas is a great step in the right direction and good motivation to further current laws. All of this information from today's session is so interesting and new to me and it motivates me to come to class".

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Next Module:

Topics: Policies & Regulations Governing Watersheds, Raleigh Climate Plan & Current Projects, Warren County Environmental Justice Movement, Equity & Environmental Justice Movement

October 23, 2021 @ 10:00 am – 1:00 pm

Image 7 & 8. Permeable pavement (top) and bioretention area (bottom) in front of the Walnut Creek Wetland Center. Photo Courtesy of Amin Davis.