

Using Mobile Working Groups for community impact and prioritization of water quality solutions in the Rock Creek watershed

As the United States' population becomes increasingly urbanized, balancing human needs and the impact of urban, built environments on the natural spaces they occupy becomes more urgent. The Washington, DC Metro area is an excellent case: more than 6 million people residents create stresses on impacted waters, and can be stewards in the restoration of those waters.

Stormwater runoff from built environments is one of the most pressing issues within an urban context, particularly within the Rock Creek watershed. The problem itself is multifaceted: hydrological systems interfacing with impervious surfaces, collecting nitrates, phosphates, and other pollutants that flow into waterways. It is one of major outflows directly connected to the combined sewer system flowing directly into streams and rivers. Rock Creek Park sees about 2.48 million visitors per year and contributes about \$64,341 annually to the region's economy (Anzelmo-Sarles, 2016). Rock Creek sits within the Potomac Watershed, the source of Washington, DC's drinking water with more than 6.11 million residents living within the watershed and contributes a significant amount of nitrogen, phosphorus and sediment to the Chesapeake Bay.

The stormwater challenges are exacerbated by decreasing pervious surfaces and increasing erosion and sedimentation in Rock Creek. District agencies, civil society groups, and academic institutions are working on solutions to decrease the amount of stormwater entering urban waterways while increasing the quality of that stormwater, and ultimately our streams. Efforts are widespread and varied from green infrastructure solutions including, LID, and habitat restoration to built-environment solutions including stormwater overflow diversion tactics to outreach and education campaigns. In the Rock Creek watershed, these challenges – and potential solutions –span public and private property, including a number of federal agencies and entities. The large number of siloed agencies, civil society organizations, academic institutions and individuals working towards cleaning and greening the Rock Creek Watershed lends itself to disparate understandings of programmatic prioritization. Formalizing a shared definition of the goals, exactly what it means to have a cleaner and greener Rock Creek, along with building a framework of how we make decisions to prioritize projects and programs allows for the most impactful work in the future.

The MWG is interested in questions of decision-making and prioritization to create water quality solutions. How do community members and other stakeholders decide what should be done and where? The MWG will bring together experts in ecosystem service valuation, water quality monitoring and LID design to explore impacts of different types of stormwater solutions. Academic institutions and civil society organizations rooted in communities will contextualize the work and provide guidance regarding where this work should be done and the impact on the people living and working in these areas. Because the urban context is inherently people-focused the MWG participatory research approach is critical to mapping ecological impacts on space while asking important questions about efficacy, desire and need for stormwater solutions.