

Developing Credits and Incentives for Innovative Stormwater Management

Collaborative Learning Group Meeting
April 4, 2012, 9:00 am-1:00 pm
Willoughby Hills Community Center, Willoughby Hills, OH

Group Members Present: Eric Dodrill (Perkins Township), Ken Fortney (Erie County), Lynette Hablitzel (NW OEPA Office), Clyde Hadden (CT Consultants), Frank Lopez (Old Woman Creek NERR), Matt Scharver (CRWP), Rachel Webb (NEORS), Cheryl Wolfe-Cragin (Old Woman Creek NERR), Betsy Yingling (NEORS).

Project Team Members Present: Amy Brennan (CRWP), Jay Dorsey (ODNR), Crystal Dymond (Erie SWCD), Heather Elmer (Old Woman Creek NERR / ODNR), Ona Ferguson (Consensus Building Institute - CBI), Breann Hohman (Erie SWCD/OWCNERR).

Next Steps:

- All – Share Design Assistance RFP with anyone who might be interested in submitting (now)
- All – Tell Jay Dorsey ideas of people who might be good on the modeling workgroup (in April)
- Next CLG meetings are: July 17th, 9am-1pm in Vermilion and October 18, 9am-1pm likely in Perkins Township.
- Amy Brennan – Send draft Monitoring Scope of Services and RFQ to CLG members (in April)
- A 1.5 day Collaborative Learning Training will be held on June 17 1-4pm and June 18 9am-4pm at Old Woman Creek NERR. CLG members are welcome but not expected to attend.

Site Visit: Gully Brook Park – Lake Metroparks – Willoughby Hills

Participants met at Gully Brook Park to see the site's stormwater management systems, which included Kevin Hoffman, P.E. Polaris Engineering & Surveying and Eric Stechschulte from Lake Metroparks who described the design and installation process and explained the decisions made on site. Participants were especially interested in how the practices are or are not hydrologically connected. As a result of questions posed by participants the team discovered that the septic system curtain drain is connected to the bioretention basin. A tailwater condition discovered in the outlet catch basin was noted as an obstacle to monitoring. The group asked if the outlet pipe connecting the bioretention to detention pond is perforated (not the case). There was also discussion regarding whether it is appropriate to have rock continued to the bottom of the bioretention cell or transition to sod.

Welcome, Introductions, Meeting Overview and Collaboration Skills Building

Amy Brennan welcomed everyone to the meeting. Participants, including new CLG members Lynette Hablitzel and Matt Scharver introduced themselves. Heather Elmer reviewed the day's agenda and presented participants with the newly created visual representation of the project timeline, which highlights key project activities over the three years of the project. All presentations and handouts from this meeting can be found at: <http://nerrs.noaa.gov/NSCIndex.aspx?ID=691>

The Project Team has decided to do some collaborative activity or mini-training at each CLG meeting, to remind ourselves that when we work with people from such distinct backgrounds we are doing something unique and sometimes challenging, and to slowly build all our awareness and skills. For the first mini-session, Ona shared one essential negotiation concept with the CLG (the distinction between

positions and interests, *positions* being the outcome you think you want or need and *interests* being the underlying reasons you want them), and discussed some of the challenges of different modes of communication. She shared lessons from Leigh Thompson’s *The Mind and Heart of the Negotiator* about the challenges and opportunities of communicating in person, via phone, or via email and some things to look out for when considering which mode to use. One major takeaway is that we tend to be more in synch with each other when we are communicating in person, so especially when working on complex tasks or having sensitive conversations, it is best to do them in person. Also, when sending emails, most of us focus on the content but not the style, and so emails sometimes come across as abrupt or even rude when that is not what the sender intended.

Update on Monitoring Sites

Amy Brennan gave an update on the effort to identify two or more sites appropriate to start monitoring given the CLG’s criteria from the January meeting. After considering more than 30 sites, the Project Team has learned that most sites are not designed with monitoring in mind. She reviewed a handful of sites still being considered for monitoring: Mayfield Heights City Hall (pervious concrete), Lake Metroparks Gully Brook (bioretention), Parma Senior High School (bioretention), Wiley Park Mayfield Village (pervious pavers), Perkins Township (multiple BMPs), and Ritter Public Library (pervious pavers). She shared Project Team lessons to date on what makes a BMP site monitorable:

Top Monitoring Challenges	The Ideal Monitoring Site
<ul style="list-style-type: none"> • Hydrologic connection to other BMPs • Lack of BMP design detail • Non-standard design criteria • Unable to quantify inflow (multiple inflows, hydrologic connections, watershed unknown) • Outlet not monitorable (size of outlet pipe, backwater effects, multiple outflows, catch basin size) • Problematic BMP siting • Inadequate maintenance 	<ul style="list-style-type: none"> • 3x3 or 4x4 catch basin • Single inflow with clearly-defined watershed • Single outlet with no tailwater effects • Designed to meet Rainwater and Land Development standards applicable today • As-builts • Infiltration is a design objective • Construction oversight ensures the project is built to spec • Maintenance plan in place • BMP sited away from streams or steep slopes

Participants discussed monitoring, looked at a photo of what the monitoring equipment will look like, and sought to understand the requirements for a site to be monitorable. One of the participants asked for clarification regarding what are the most important considerations in making a site monitorable, expressing concerns that it may be difficult to eliminate tailwater effects in Erie County due to depth limitations. Amy noted that it may be necessary to dredge practices to ensure a free flowing outlet. Jay was out of the room during this discussion but in a subsequent project team meeting acknowledged that getting adequate depth to eliminate tailwater effects will be a challenge in certain contexts. He indicated that this will not be a problem at the Perkins site as long as existing catch basins are not used. There is plenty of depth available at the site, but this will impact costs associated with setting it up for monitoring. In other Erie County locations, pipes might need to be upsized.

Perkins Township Site Example

Crystal Dymond and Eric Dodrill told the story of Perkins Township and the effort to plan and design multiple BMPs on site. One of the objectives at the Perkins site is to feature a range of BMPs in one place. One of the major efforts of the project went into educating multiple audiences on LID. They sought and needed understanding and acceptance from the Township, the public, political entities, local zoning, and contractors, developers and engineers. They shared the wide range of estimates from contractors to do traditional stormwater management and to do LID, noting the challenge of accurately comparing costs since estimates each contain different project components in different line items (someone suggested creating a template of how the estimate should be submitted in the future). Someone noted that putting more BMPs than needed on site might mean their cost estimates overwhelm other people looking for models when on other sites fewer BMPs would be required to meet stormwater requirements. Their considerations of design and space included considering green roofs and rain water harvesting, the need to work with existing catch basins, driveways, piping systems, and building locations, the challenge of drainage and watershed areas, and the complexity in terms of order of construction of getting equipment in and out (impervious and pervious concrete timing is important). Among the components they said were essential for their project to be successful are: partnering with the right people, understanding a range of different limitations including state regulations, timeframes, space, and budgets, and being aware of different opportunities for grants and design assistance.

Finding a Monitoring Contractor

Amy Brennan gave an update on the effort to hire a contractor to do monitoring for the project. One promising plan had been to hire USGS to run the monitoring of sites for the project. It turns out that constraints on the NERRS Science Collaborative mean that it is not possible to hire USGS under this project (can't use federal dollars from one agency to pay people from another agency). We are now exploring partnerships with universities and private consulting firms. The Project Team has produced a draft scope of services and will share it with the CLG soon.

Design Assistance Request for Proposals

Amy Brennan updated the CLG on the Design Assistance RFP, which was distributed starting on April 4. It has a May 1 deadline, and Amy asked that CLG members let people know about it. Priority will be given to projects in the Chagrin, Old Woman Creek, and Pipe Creek watersheds. The CLG will discuss proposals at the July meeting.

Data Needs & Modeling Workgroup

Heather presented the results of the CLG survey of types of models, data sets and resources people currently use and what gaps were identified (including limited staff time and limited knowledge of what data sets are available). One respondent gave the following eloquent summary of what is needed in this realm,

“There needs to be a standardized model used by the designer and reviewer. It needs to be simplified and intuitive so that someone who wears many hats doesn't need to invest a lot of time to relearn how to use the model... to allow you to alter the key design inputs, such as dimensions, so that designers and developers have some flexibility to incorporate the controls and the reviewers have assurance that deviating from the standard design still meets the objective...”

Jay Dorsey presented on the thinking and research he's done so far related to data. The modeling goal is to characterize BMP hydrology in a manner that allows us to properly credit services (volume

reduction, peak discharge attenuation, etc.) provided by different stormwater practices. In particular, the project has the following objectives:

- Develop an accurate physical representation of the hydrologic function of each BMP and ensure the model reflects reality, is tested and groundtruthed
- Develop integrating models that allow us to account for peak discharge and volume reduction of common development scenarios with multiple BMPs
- Develop design guidance and short-hand tools

By the end of the project, we expect to have modeled at least 12 common BMPs, listed in the presentation slides. Jay has researched models and tools, and the HyPer (Bioretention Hydrologic Performance Tool) is the most promising example that we could mimic or provide inputs to. The designer or reviewer enters just a few pieces of information and the tool shows the annual volume reduction from a given practice. Participants asked how these models work in urban areas, what soils will be included (engineered?), and noted the importance of maintaining soil functions on developed sites. People discussed the fact that there are not yet successful projects renovating urban soils.

In terms of seeking data, we've solicited data sets from NC State, University of NH, University of Wisconsin, and USGS. We expect to develop SWMM, DRAINMOD, WinSLAMM build models of BMPs. CLG members were asked for input on the modeling and data collection approach. Members noted that they think this sounds like a good approach and that they look forward to seeing the results.

Jay is seeking a few other people to help manage the modeling project, working with whatever contractor gets hired. These would need to be people who will benefit from working on modeling by bringing what they learn back to their organizations. Jay asked people to let him know about people who might be interested.

Collaborative Learning Group (CLG) Business

- CLG meetings will occur approximately quarterly at rotating locations.
- Participants were asked if the 9am-1pm meeting schedule works generally, and if it would be ok if we had to start later occasionally just depending on how early we can get into the meeting venue. They didn't have any concerns with this plan.
- At the end of each calendar year, the project will produce certificates indicating topics of discussion and hours for professional development.
- We will be producing surveys of CLG members approximately twice a year to gather anonymous input regarding how we are working together, to what extent participating in the project is increasing group member understanding, technical expertise, and ability to overcome barriers to effective stormwater management. The first survey will be circulated this summer.
- Participants noted that it is best to have few and clear emails between meetings, maybe the six week update can have less text and link to the website for people who want to read more.