Urban Stormwater Working Group (USWG)

Zoom Meeting
July 14, 2020 2:00 – 3:00pm

In attendance: Christine Davis, Illinois EPA; Trevor Sample, Illinois EPA; Eliana Brown, Illinois Extension; Kate Gardiner, Illinois Extension; Raelynn Parmely, Illinois Farm Bureau; Reid Christianson, University of Illinois; Emma Stein (intern with MWRD), Jeff Edstrom, IDNR Coastal Programs, John Sloan, NGRREC; Lisa Merrifield, Illinois Extension; Mary Mitros, DuPage County; Mary Beth Falsey, DuPage County; Holly Hudson, CMAP; Steve Brendel, Madison County; Heidi Leuszler, Parkland College; Lecia Bushak, WILL; Allison Neubauer, Illinois-Indiana Sea Grant; Donna Twickler, Sierra Club

Summary

Welcome and Member Updates

Eliana Brown welcomed everyone to the meeting and took attendance. Heidi Leuszler of Parkland College gave an update on the National Green Infrastructure Certification Program (NGICP). Parkland will be offering the course completely online in the fall.

Green Infrastructure Grant Opportunities – *Chris Davis, Illinois EPA*

Illinois EPA announced the Green Infrastructure Grant Opportunities (GIGO) on June 22, 2020**.** Funded under the Build Illinois bond fund, its purpose is to address water quality protection through decreased localized flooding and/or riverine flooding. The way to do this is by decreasing stormwater runoff to Illinois rivers, streams, and lakes by reconnection of a stream with its floodplain or stormwater treatment and control. The project can be on either public or private land. The GIGO program runs from 2021 to 2025 with $5 million available per year.

The grant is available statewide with a range of $75,000 - $2.5 million. The minimum match is 25% (15% for disadvantaged areas). Eligible projects are best management practice (BMP) implementation with limited design costs. Practices are single BMP, treatment train, or watershed-wide projects. This includes floodplain reconnections, porous/permeable pavements, bioinfiltration/retention, wetland creation and/or restoration, watershed-wide projects, and downspout or illicit flow. Ineligible costs include land acquisition, BMPs for new development, project administration, routine O & M, education/outreach, and monitoring.

Chris provided instructions and a timeline for applying. The first step in applying is to pre-register on the GATA Portal and receive state approval and the application and budget must be submitted by August 21, 2020. Lastly, she showed examples of GIGO-type eligible projects, which include rain gardens and daylighting projects, and went into further detail on several past-funded projects.

National Great Rivers Research and Education Center – *John Sloan, NGRREC*

John Sloan described the National Great Rivers Research and Education Center (NGRREC), which is in East Alton, Illinois, along the banks of the Mississippi River. It began as a partnership between the University of Illinois and Lewis and Clark Community College. NGRREC employees are employees of Lewis and Clark Community College. The center's scholars and scientists study the ecology of the big rivers, the workings of the watersheds that feed them, and the ties to the river communities that use them. NGRREC is working towards sustainable river systems.

There are three branches of NGRREC: research, education, and conservation. The research branch has researchers in terrestrial (forest) ecology, watershed science, wildlife ecology, community ecology, aquatic ecology, and ornithology. The education branch has several programs, a summer internship, and public activities like the Water Festival, Neighbor Nights, and Brewers and Biologists. The conservation branch has the Habitat Strike Team and the Land Conservation Specialist Program.

NGRREC runs the RiverWatch program, which provides training for citizens to collect data in wadeable streams. Signature programs include Great Rivers Ecological Observatory Network (GREON), which is a series of water quality monitoring platforms strategically placed on the Mississippi River or its tributaries, and the Great Lakes to Gulf Virtual Observatory (GLTG), which is a website for visualizing water resources data from the Mississippi River Basin aggregated across various sources.

The Confluence Field Station is LEED Certified Gold with a green roof, porous pavement, onsite wastewater treatment, and stormwater capture and reuse. They want to continue working with scientists and have good relationships with St. Louis University, Washington University, Southern Illinois University Edwardsville, and a few others.

Water Quality Trends Analysis – *Jeff Edstrom, IDNR Coastal Programs*

Jeff Edstrom gave an overview of the Illinois Coastal Water Quality Trends Analysis, which aims to find water quality trends to help determine necessary management actions and to identify "unknown" sources and causes of water quality impairments. There are two parts to the effort: the water quality database and model and the water quality data monitoring, collection, and analysis visioning.

The water quality database and model is an Illinois State Water Survey effort funded by the Illinois Coastal Program. It uses a model that incorporates the Illinois EPA 2018 Integrated Water Quality Report to identify impairments for different waterways.

The water quality data monitoring, collection, and analysis visioning is used to examine ways that we can better understand what is happening in the environment, how we set water quality goals and priorities in the next five years, and how to identify more effective approaches to monitoring and data analysis, as well as to identify data needs going forward and understand data gaps in information, time, and location. Five-year priorities and goals for the monitoring vision to focus on are how to make existing environmental data more available and accessible as appropriate, how to improve monitoring efforts to get a better water quality data, and how to develop a framework to better analyze and characterize water quality.

A survey sent to advisory group members showed that more consistency in water quality dataset formats, more high-quality data, collecting appropriate automated data, making data more accessible, more timely interpretation of data, and to better understand water quality trends over time are higher priority issues, whereas lower priority issues include crowdsourced water quality data, organized private efforts to collect water quality data, and artificial intelligence technologies.

Next steps are to get the ISWS Trends Model Analysis and identify data analysis gaps based after model data formatting by location, time, and data type, identify potential useful technologies that might improve data collection, and unknown sources and causes in Impaired Waters list.

Next Steps

The next USWG Zoom meeting is August 11th from 2:00 – 3:00pm.

Meeting Minutes

Welcome and Member Updates

Eliana welcomed everyone to the meeting and took attendance. Heidi provided an update.

Heidi Leuszler, Parkland College: Parkland College has permission from WEF to hold their National Green Infrastructure Certification Program (NGICP) training virtually this year. There is usually a 35-hour time commitment with 9 hours of a field component. This year, they have decided to waive the 9-hour in-person field training so that they can offer the training completely online. Eliana is the co-trainer and we will try to do virtual field trips. Parkland has a TV crew that could film the tours. The exam does have to be in-person though, so people would have to come to Parkland or work out a proctor site. Training will start on Thurs, Oct 8th with the exam offered at Parkland during the week of Nov. 9th.

Green Infrastructure Grant Opportunities – *Chris Davis, Illinois EPA*

Illinois EPA announced the Green Infrastructure Grant Opportunities (GIGO) on June 22, 2020**.** Funded under the Build Illinois bond fund, its purpose is to address water quality protection through decreased localized flooding and/or riverine flooding. The way to do this is by decreasing stormwater runoff to Illinois rivers, streams, and lakes by reconnection of a stream with its floodplain or stormwater treatment and control. The project can be on either public or private land. The stormwater treatment and control can be directly upstream or downstream of an impervious area that currently impacts a waterway of Illinois and from impervious surfaces associated with existing urban development.

The GIGO program runs from 2021 to 2025 with $5 million available per year. Applications for the first year are due August 21, 2020. The grant is available statewide, and the range is $75,000 - $2.5 million, with $2.5 million being the maximum grant amount. The minimum match is 25% (15% for disadvantaged areas). Project length is normally 24 months. Eligible projects are best management practice (BMP) implementation with limited design costs. Practices are single BMP, treatment train, or watershed-wide projects. This includes floodplain reconnections, porous/permeable pavements, bioinfiltration/retention, wetland creation and/or restoration, watershed-wide projects, and downspout or illicit flow. Ineligible costs include land acquisition, BMPs for new development, project administration, routine O & M, education/outreach, and monitoring.

Expected applicants would be anyone who could legally accept funds from the State of Illinois, like municipalities, sanitary districts, park districts, watershed groups, and other non-profit groups that pre-register through the Grant Accountability and Transparency Act (GATA) Portal. The Reimbursement Program requires a 25% match (and limited 15% in disadvantaged areas). Applicants must pre-qualify in the GATA Portal (grants.illinois.gov) to apply.

If funded, the organization would enter into a financial assistance agreement with the Illinois EPA, with product development and GATA management throughout the agreement period. Product development would include designs and engineering permits, 10-year operation and maintenance plan, BMP form and pollutant load reduction calculations, BMP implementation after design approval, quarterly reporting (GATA PPR and PFR), invoicing, and financial reporting with photos. Then there would be reimbursement of eligible costs, which must be incurred during the grant period.

The application process and timeline is as follows. The notice of funding posted was posted on June 22, 2020. First step is the applicant pre-registering and receiving state approval. After that, application and budget must be submitted by August 21, 2020. Agency then reviews application and develops a workplan by fall 2020. Applicant completes fiscal/administrative/programmatic risk assessments. Then notice of state award (non-binding) in fall 2020 and, finally, agency develops a grant agreement in winter 2020.

Chris showed examples of GIGO-type eligible projects, which included rain gardens and daylighting projects, and went into further detail on several past-funded projects. The Springbrook Creek Stream Meandering (Forest Preserve District of DuPage County - 2008) was funded by the Section 319 Grant Program. It installed a stream channel remeander with an annual load reduction of 3,237 tons of sediment, 1,619 lbs of phosphorus, and 1,619 lbs nitrogen. The Morton Arboretum Parking Lot Runoff Control (Morton Arboretum - 2006) was also funded by the Section 319 Grant Program. It installed porous pavement, 4' deep gravel drainage layer, curb cuts, bioswales, level spreader, rock outlet protection, filter strip, and wetland. The Downspout Disconnection Assistance Program (Village of LaGrange Park – 2018) was funded by the Illinois Green Infrastructure Grant Program. It installed downspout disconnections, rain gardens, bioswales, dry wells, rain barrels, and popup emitters and resulted in 4,407 downspouts disconnected from 1,847 homes. The Old Salem Chautauqua Wetland Basin Project (Old Salem Chautauqua Homeowners Association – 2006) was funded by the Section 319 Grant Program. It installed a pond with side channel outlet with two wetland cells. Originally a historic 6-acre pond constructed in 1926, it was breeched in 1997 by a flash flood. The project resulted in a 6.4-acre pond with stable outlet/overflow channel with sediment load reduction of 19 tons per year.

Questions/Discussion:

Holly Hudson: Can administrative labor be counted towards the match?

Christine Davis: No, it cannot.

Holly Hudson: Okay thank you! Looks like this covers all the bases.

Heidi Leuszler: Excellent work, Chris! This is fantastic!

National Great Rivers Research and Education Center (NGRREC) – *John Sloan, NGRREC*
The facility is located in East Alton, Illinois along the banks of the Mississippi River. It is a LEED Gold certified building.

The National Great Rivers Research and Education Center (NGRREC) started at the University of Illinois with Dr. Gary Rolfe, who thought Illinois needed a freshwater field station. Gary collaborated with Dr. Dale Chapman from Lewis and Clark Community College, who got the resources to build the facility. Dr. Dick Warner was the senior scientist. NGRREC employees are employees of Lewis and Clark Community College. At one point, they shared the building with the Illinois Natural History Survey at the Prairie Research Institute.

The center's scholars and scientists study the ecology of the big rivers, the workings of the watersheds that feed them, and the ties to the river communities that use them. NGRREC is working towards sustainable river systems.

There are three branches of NGRREC: research, education, and conservation. John is part of the research branch. The research branch includes Dr. Lyle Guyon for terrestrial (forest) ecology, Dr. John Sloan for watershed science, Dr. John Crawford for wildlife ecology, Dr. Tony Dell for community ecology, Dr. Danelle Haake for aquatic ecology, and Dr. Justin Shew for ornithology. The education branch has Sarah Fisher as the director, Dr. Danelle Haake as the RiverWatch director, and an environmental educator to be hired soon. Education branch programs include Project WET, Swarovski Water School, Mississippi River Xchange, and a summer internship. Public activities include the Water Festival, Neighbor Nights, and Brewers and Biologists. The conservation branch has Dr. Justin Shew as director, Cody Berry as Habitat Project Coordinator, and Lindsay Griggs as Habitat Senior Project Assistant. The Habitat Strike Team manages the Illinois Recreational Access Program (IRAP) and the Grant to Restore Habitat for Wildlife and Provide Lewis and Clark Student Training. The Land Conservation Specialist Program consists of four specialists and provides technical assistance to landowners enrolled in USDA Farm Bill conservation programs.

NGRREC runs the RiverWatch program, which is a citizen science program that provides training and then the citizens collect data in wadeable streams. NGRREC Signature programs include Great Rivers Ecological Observatory Network (GREON), which is a series of water quality monitoring platforms strategically placed on the Mississippi River or its tributaries. Great Lakes to Gulf Virtual Observatory is a website for visualizing water resources data from the Mississippi River Basin aggregated across various sources.

GREON routinely measures temperature, dissolved oxygen, specific conditions, turbidity, chlorophyll, blue-green algae, fluorescent DOM, and nitrate. The GLTG Virtual Observatory is a web-based geospatial application that integrates water quality data and analytical tools from multiple sources, allowing a user to visualize and understand nutrient pollution and water quality conditions in the Mississippi River watershed. It provides users with tools to explore, analyze, and compare water quality data from the Mississippi River and its tributaries.

The Confluence Field Station is LEED Certified Gold with a green roof, porous pavement, onsite wastewater treatment, and stormwater capture and reuse. The community loves to visti and walk around on the green roof. They want to continue working with scientists and have good relationships with St. Louis University, Washington University, Southern Illinois University Edwardsville, and a few others.

Illinois Coastal Water Quality Trends Analysis – *Jeff Edstrom, IDNR Coastal Programs*
Jeff first gave an overview of the Illinois Coastal Water Quality Trends Analysis. It grew out of the Illinois Coastal Nonpoint Program Approval Process to determine water quality trends to help determine what management actions are needed where and to identify what is needed to identify “unknown” sources and causes of water quality impairments. There are two parts to the effort: the water quality database and model and the water quality data monitoring, collection, and analysis visioning.

The water quality database and model is an Illinois State Water Survey effort funded by the Illinois Coastal Program. It uses a model that incorporates the Illinois EPA 2018 Integrated Water Quality Report to identify impairments for different waterways. ISWS is collecting and formatting data available from different agencies and organizations and the next step is an exploratory data analysis that identifies data

gaps over time, parameters, and location. If there is enough data, the full model can be implemented using time series data. The goal is to create a foundation database that can be built upon in the future for more analysis. The database and model developed for this current project is based on one used for a trends analysis of the Fox River.

The water quality data monitoring, collection, and analysis visioning is used to examine ways that we can better understand what is happening in the environment, how we set water quality goals and priorities in the next five years, and how to identify more effective approaches to monitoring and data analysis, as well as to identify data needs going forward and understand data gaps in information, time, and location.

ISWS is pulling data from several sources, including Current, MWRD, and the state. However, there are data management roadblocks because all organizations have errors in data, which is just the nature of working with large amounts of data. They come to light when you are putting them together in a database. These include transcription errors (wrong data in column, offset, bad dates), reporting limits (listed ones are different than data says), and inconsistent remark codes. Helpful practices include minimal formatting on spreadsheets (avoid color coding, font changes), consistency within organization along multiple years, clearly labeled date/time, location, parameter and units, and sort columns before sending them (this weeds out mistakes).

Five-year priorities and goals for the monitoring vision to focus on are how to make existing environmental data more available and accessible as appropriate, how to improve monitoring efforts to get a better water quality data, and how to develop a framework to better analyze and characterize water quality.

We sent out a survey with questions developed from the visioning document. We got 17 responses (out of 29) and the general themes that came out of the survey are similar to the themes that came out during interviews/discussions with advisory group members over the last three months.

Lower priority issues are crowdsourced water quality data, organized private efforts to collect water quality data, and artificial intelligence technologies. Higher priority issues include more consistency in water quality dataset formats, more high-quality data, collecting appropriate automated data, making data more accessible, more timely interpretation of data, and to better understand water quality trends over time.

Next steps are to get the ISWS Trends Model Analysis and identify data analysis gaps. We are waiting for the complete data formatting and data model analysis for the ISWS Trends Model Analysis. For data analysis gaps, we need to identify gaps based after model data formatting by location, time, and data type, identify potential useful technologies that might improve data collection, and unknown sources and causes in Impaired Waters list. An example from the Impaired Waters list is addressing Kellogg Creek in the coastal region. There are lots of codes for sources and causes and we need to understand the use. One of the things we've been looking at is translating these tables so that you can see the information and see what's causing the impairment.

Questions/Discussion:
Holly: What are the tables that are most impacting?

Eliana Brown: Have you thought about this from a watershed planning perspective?

Jeff Edstrom: We are thinking about it for urban areas. Some of the things we are going to find out will be useful across the state, like a field guide for sources and uses. We are thinking of how to organize the data for watershed planning and would love input from people in urban areas across the state on what you think would be useful.

Eliana Brown: A field guide is interesting and could be very helpful. We'll return to this idea during future meetings.

Next Steps

The next meeting is August 11th, 2020 from 2:00 – 3:00pm. The agenda with the Zoom link will be posted on the Illinois EPA's NLRS webpage.