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# CALUMET STORMWATER COLLABORATIVE

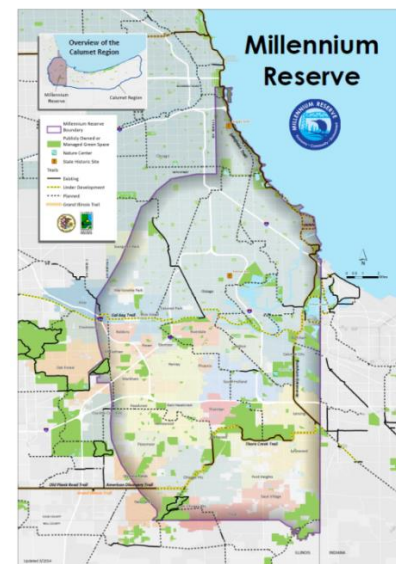
MEETING SUMMARY – April 3, 2015

Blue Island Public Library  
2433 York Street, Blue Island



## Attendees

Mark Van Auken, Arcadis  
Gunilla Goulding, Arcadis  
Harriet Festing, Center for Neighborhood Technology  
Hal Sprague, Center for Neighborhood Technology  
Burrell Poe, Center for Neighborhood Technology  
Molly Oshun, Center for Neighborhood Technology  
Mary Debacker, Center for Neighborhood Technology  
Kate Evasic, Chicago Metropolitan Agency for Planning  
Thomas Burke, Christopher Burke Engineering  
Jason Berry, City of Blue Island  
Jodi Prout, City of Blue Island  
Dominic Tocci, Cook County Department of Planning & Development  
Carrie Westhoff, EDI  
Nick Textor, EDI  
Eric Otto, Forest Preserves of Cook County  
Maddie Mahan, Friends of the Chicago River  
Mary Ellen Guest, Historic Chicago Bungalow Association  
Julia Plumb, High Bridge  
Lisa Cotner, Illinois Department of Natural Resources  
Amy Walkenbach, Illinois Environmental Protection Agency  
Emily Clamp, Illinois Environmental Protection Agency  
Momcilo Markus, Illinois State Water Survey  
Elias Bekele, Illinois State Water Survey  
Danielle Gallet, Metropolitan Planning Council  
Peter Skosey, Metropolitan Planning Council  
Kelsey Pudlock, Metropolitan Planning Council  
Richard Fisher, Metropolitan Water Reclamation District of Greater Chicago  
Boba Netorovoic, Metropolitan Water Reclamation District of Greater Chicago  
Cedric Robertson, Metropolitan Water Reclamation District of Greater Chicago  
Brent Shraiberg, Metropolitan Water Reclamation District of Greater Chicago  
John Watson, Metropolitan Water Reclamation District of Greater Chicago  
Jim Yurik, Metropolitan Water Reclamation District of Greater Chicago  
Lydia Scott, The Morton Arboretum  
John Legge, The Nature Conservancy  
Mollie Dowling, OAI Chicago Southland  
Ed Paesel, South Suburban Mayors and Managers Association  
Reggie Greenwood, South Suburban and Mayors and Managers Association  
Imad Samara, U.S. Army Corps of Engineers



Karen Kreis, Village of Midlothian

## **Member Updates**

Lydia Scott, Morton Arboretum, stated that the Arboretum has funding available, and they are looking for an innovative project with the Millennium Reserve to invest their available funds. She was interested in learning more about the Collaborative, as it could be a potential avenue to allocate funds.

## **Blue Island's IGIG Grant Update**

Jason Berry, City of Blue Island, gave an overview of the City's stormwater management efforts and initiatives that have developed over the past couple of years. He continued to describe where they currently stand, and where they hope to be in the near future. With the help of many of the individual members of the Collaborative (present in this month's meeting), green infrastructure has been at the forefront of Blue Island's stormwater management plans. From the beginning, Blue Island has taken a bottom up approach to green infrastructure—the municipality has had limited funding and overall limited municipal resources, so at the time, they began to address the problem with the most affordable solutions. With the help of MWRD, they were able to implement a rain barrel program in the community. There was no predetermined selection process, so city officials went door-to-door asking if homeowners wanted a rain barrel. Initially Berry told residents that the barrels would help with flooding. Later they realized that actually didn't help, or at least they had little to no impact on basement flooding—one of the biggest stormwater-related problems in Blue Island.

Followed by the rain barrels program, MWRD took up a project on Longwood—a street that notoriously floods in the City of Blue Island. This project coupled with their Phase II project will present a combination of green and grey infrastructure solutions. Berry pointed out that it has not always been a smoothest process (e.g. contentious community meetings, and angry/upset residents), and MWRD has taken many blows with him along the way. He mentioned that Blue Island has a similar set of problems as Midlothian. Berry believes that the bottom-up approach has helped create support and advocacy, as well as kept the community committed. In addition to MWRD's efforts, Blue Island received funds from the South Suburban Mayors and Managers Association (SSMMA). Berry recalled as a result of the Collaborative, there is a collective notion that we need to stop doing small pilot projects all over the place. In turn, Blue Island has used these funds to bring in CNT to organize groups and help determine where green infrastructure would be installed. Furthermore, IEPA signed off on an Illinois Green Infrastructure Grant (IGIG) in March 2014, which has been a tremendous help for Blue Island's stormwater management efforts.

One participant asked, what were some factors of success? Berry replied honesty and consistency in creating a comprehensive planning framework. Harriet Festing, CNT, commented that many people say much of Blue Island's success is Jason Berry himself - that a community champion is needed. While Berry was thankful for this comment, he explained that all staff is equally important, particularly calling out that Jodi Prout has been imperative for the work Blue Island has been able to accomplish over the last couple of years. Berry also pointed out that Blue Island has had the opportunity to be a part of the Collaborative since its inception. Karen Kreis, Village of Midlothian, asked, if Blue Island has a secret to acquiring funds. Berry's response was that Blue Island has applied to the IGIG three times. At the time their proposal was accepted they already had a big project in the works and were able to leverage off this larger effort. Danielle Gallet, MPC, concluded that it is important to show up at the table, and that it really takes multiple agencies to work on solving issues related to stormwater—and the hope is the Collaborative is initiating and supporting these actions.

## **Presentations: Metropolitan Water Reclamation District of Greater Chicago (WWRD) Work in the Calumet Region**

### **o Green Infrastructure Installation in Blue Island**

Jim Yurik, MWRD, presented on the progress of MWRD's green infrastructure projects in Blue Island. As of now, they expect to start working on the ground by the summer of 2015. The project is located in the

northeast corner of Blue Island—around approximately 119<sup>th</sup> to 123<sup>rd</sup>, and Western Avenue to Vincennes Road. This is an area that is very prone to flooding, and where people have been dealing with flooding for over 20 years. MWRD has also contracted some of the work to EDI, who identified eight areas—including parks and nearby small parking lots—for the green infrastructure placement. Initially the bid for the project's installation went out in the spring of 2015, however bids came in higher than anticipated. As a result, MWRD is in a second round of the bidding process, which closes mid-April 2015. MWRD should have its selection by mid-May 2015. They intend to start construction in early summer, and have the installations completed by early fall 2015.

Yurik stated that green infrastructure is not going to completely stop flooding, but it will help support stormwater management with respect to the greater scope of projects and strategies that Blue Island and MWRD are implementing. Yurik also mentioned that as a county-wide agency they want to bring cutting-edge technology to all neighborhoods within their jurisdiction—including less affluent communities like Blue Island. John Watson, MWRD, also noted that much of their work is in response to the consent decree that is forcing MWRD to invest in green infrastructure projects throughout Cook County.

One participant mentioned that for the last bid, contractors had to put down a significant deposit. Yurik replied that 5% is the standard deposit that is required for all MWRD contracted work. Another participant asked about the estimate of efficiency. Watson said that efficiency of the projects will come with the monitoring once the projects are in the ground and completed. Watson also went into describing the design specs of the green infrastructure designs that were chosen. He specified that rain gardens do not have drains, and thus the water captured would never get to the sewer. The designs would avoid gas lines. The bottom of the gardens have geotextile lining and are filled with a retention specific soil mixture. He asserted that an 18-inch separation between the water table and the bottom of the rain garden ensure that groundwater will not seep into the garden from below. Watson also explained the difference between surface and void storage—surface storage is pooling water exposed at the surface, and void storage are the gaps or empty space found between the organic matter within a soil mixture. Surface storage has a capacity of 100%, while void storage has a 60% capacity. One participant asked MWRD where they take the topsoil that is removed to install a rain garden. Watson and Yurik stated that it is typically taken to a landfill, but would consider looking at an alternative use—such as making the soil available to landscape architects. Following this question, another participant asked MWRD what they would do with contaminated soils. Watson replied that as of now, they have not run into this issue, but if they do, they would dispose of it properly.

Another question regarding the efficiency of the green infrastructure came up. Watson replied that they don't know (yet) how much, or at what frequency the water will infiltrate the interventions. Based on known rates of soils throughout Chicago as well as the materials used in the green infrastructure, MWRD can make rough calculations on the anticipated total stormwater infiltrated. One participant mentioned that having this information would be good to articulate to the public that, even with clay soils, green infrastructure can improve a soil's infiltration capacity.

Watson stated that USGS will be doing most of their monitoring, and that monitoring is not covered under Blue Island's grant funding. In response to a question on the status of monitoring, Watson explained that this step of the project is just getting started. It will definitely be a topic in the future that MWRD would be willing to present to the Collaborative.

One participant asked how the locations were picked. Watson and Berry explained that the first step was ensuring that residents were okay with it. Then, they had to identify where utilities were located and thereby, decide on which areas were the most logistically easy. Finally, they looked at size—which areas were bigger and/or longer, e.g. longer parkways were seen as more effective. The selection for Longwood Ave was to capture water coming down the street. Watson and Berry continued to explain that they examined a variety of scenarios using UIC's green infrastructure model that allowed them to quickly test different green infrastructure placements. The site, in some ways, was also selected based on what they learned from the modeling. Watson affirmed that they also used a more detailed engineering model through the selection process. They concluded that work in Blue Island, and really the region at large is incremental progress—they

are very much learning as they go. In the end, it will likely be a combination of green and grey stormwater solutions that will have the greatest impact on flooding.

Another participant commented that there isn't a significant amount of existing data that illustrate the effectiveness of green infrastructure in the northeastern Illinois region. There are a lot of green infrastructure projects, but rarely are they shared at the regional or national level. Watson agreed and said MWRD would certainly look into contributing their work on the national scale, e.g. the BMP database. The final question for these presenters was how receptive were the residents? Berry responded that they picked a neighborhood in Blue Island that has been the most impacted by flooding. Therefore, the residents were pretty receptive. Additionally Blue Island has 14 alderman and 7 wards; they have played a significant role in connecting with their constituents, and building the commitment and advocacy that now exists.

- **Local Flooding Plan for Blue Island Neighborhood**

EDI was hired by MWRD to help solve the flooding issue around Washington St. in Blue Island. Carrie Westhoff, EDI, emphasized that their solution will need to be economical. They are going to try to present solutions that will solve a 100-year storm, but will bring down the size of the storm (e.g. a 50-year storm, 25-year storm, or 5-year storm) until it is economically feasible. Currently EDI is assessing a number of alternatives with respect to three main project components—an H&H model, an Environmental Assessment (EA) field survey, and a geotechnical assessment. It was noted that the H&H model will incorporate results from the EA and geotechnical assessment. Part of the H&H model is examining elevation differences contributing to the areas. The EA will see if there are any recognizable environmental conditions that would cause any problems associated with flooding. The geotechnical assessment encompasses soil borings, soil (surface) samplings, and clean construction and demolition debris. They used XP/SWM software to create an existing conditions baseline. Based-off results from developing this baseline, they saw that some of Blue Island's pipes were collapsed and others were filled with debris. Given that Blue Island agreed to fix these pipe issues (Jason mentioned that they finished cleaning them this week), EDI modeled cleaned out pipes in the final baseline condition. They also included Blue Island's proposed green infrastructure project. EDI presented a map showing flood levels associated with each alternative assessed. They looked at 24 different storm frequencies. These included 10-year, 25-year, 50-year and 100-year storms at a 1, 2, and 3 hour storm duration. On the map being presented, light blue indicated moderate flooding, while purple indicated over a foot of flooding. From here, they are ultimately trying to determine what combinations of improvements will alleviate flooding at the stage of a 30% design plan.

One participant asked if the results would be available to the public. MWRD is not sure if it would be publically available at this time. Another participant wanted to know the relationship between the two projects (presented thus far). MWRD explained that this work is somewhat of an addition to the work that was done last year. A third participant asked whether these projects are being implemented on private or public land. MWRD asserted that all projects are currently on public property, however they are parkways that sit in front of private property, and often treated or maintained as private property. Another participant raised the issue of maintenance. Berry explained that maintenance is an ongoing challenge. MWRD makes partners sign an agreement saying that the recipient will maintain the newly installed green infrastructure. Previously, Blue Island had worked with the University of Illinois Extension to help maintain green infrastructure in the community. Now, Blue Island is looking to create new jobs and hire local people (through High Bridge); otherwise, the City will use the public works budget to upkeep the green infrastructure. Watson also stated that MWRD always uses native, low maintenance plants that are salt and drought tolerant, which can have a significant impact of lowering the maintenance required. Signage was another topic raised. Berry commented that the grant funding requires you to incorporate signage, and the City has already begun thinking about signage placement. One question that was directed at MWRD was whether or not you could bid on a single green infrastructure installation, e.g. one rain garden. MWRD explained that this is not possible, it is easier for the agency to have one bid for the whole project, but two or more people can collaborate and respond to the bid collectively. Momcilo Markus, Illinois State Water Survey, asked MWRD which rainfall intensity data was used in their modelling efforts. When MWRD stated that they used the Bulletin 70, he mentioned that this data will likely change, and is something to consider in the near future for this project and others.

### ○ **Flood Plans for Multiple Communities in Calumet Region**

Associates of Arcadis, Mark Van Auken and Gunilla Goulding, presented on their stormwater master plan spanning across the local region. The project approach started off with a pilot drainage area identified by MWRD. Initially this area was a 6-square mile rectangle but will morph as the drainage areas are thoroughly delineated. Similar to EDI, Arcadis' goal is to solve flooding for a 100-year storm at a reasonable cost. If the cost is too high to solve a 100-year storm, the size of the storm will decrease until costs are feasible. One unique component of Arcadis' work is that they are looking into how private property, in addition to public, can be used to alleviate flooding. The main steps of this project include 1) data gathering (e.g. where is the flooding occurring); 2) site surveying (e.g. what are the causes); and 3) model development (e.g. verify findings); and 4) begin identifying a mix of green and grey infrastructure alternatives. Another unique aspect of this project is that they will be identifying how projects will be implemented, including potential funding and partnering options. Right now, their next step is a flood questionnaire. They are making the draft right now; once this is finished, it will go out to the public in a hard copy and online format. After the questionnaires are analyzed, they will be presented to Blue Island to make sure the analysis represents what is found on-the-ground. Danielle Gallet, MPC commented that this is a great direction for engineers—the action of matching models to what is truly on-the-ground in the community. This will help make projects as seamless as possible, but would also build the community's commitment.

### **Discussion: Brainstorm about climate-related tools and/or modeling ideas we might explore developing with the [Midwest Regional Climate Center](#).**

Meeting participants were asked to break into small groups and were tasked with brainstorming ideas about what types of climate-related data mapping might be useful for the Calumet region, and what we might request of MRCC to assist us with. Following is a synthesized, topical list of ideas that were generated during the meeting.

#### Precipitation / Water

- Detailed precipitation data and trends from a historical, current and future standpoint.
- Precipitation data—including stormwater frequency, intensity, annual volumes.
- Mapping the connection between precipitation and future flood? Can you map where rain actually fell within a given storm, and where flooding occurs from that particular storm?
- Finer grained information on precipitation data that is tailored for public use. The public can be skeptical and having easy to understand maps that illustrate precipitation would be helpful. What is the difference between a 100-yr flood and a 100-yr rain fall?
- Precipitation patterns and spatial trends in the region with a particular focus on the south side
- Mapping of hydrology vis-à-vis groundwater re-charging? Perhaps connected to known discharge sites that can be mapped and how they affect groundwater/runoff?
- Snowpack melting patterns. Can we track snowfall and see how it affects flooding? Possibly overlay with MWRD's CSO overflow data
- Mapping of frozen waterways—in some areas can cause flooding
- Map stream flow gauges to identify any correlation between increased flows and increasing development over time. Can be helpful information for public education as well.

#### Other Climatic Themes

- Heat islands - map tree canopy and how this may overlap with regional hot spots to identify ideal green infrastructure placement.
- Air quality: understanding where better air quality exists as it relates to trees and plant data.

#### Green Infrastructure

- Mapping of green infrastructure in the region, SSMMA has a good start on this.
- Mapping the effectiveness of green infrastructure. Mapping the delta, or change over time.
- Tracking green infrastructure performance where we know it exists to track changes (benefits) over time e.g., heat island mitigation, habitat, runoff, etc.

### Wildlife & Vegetation

- Is there data that would help track species? Bird counts? Is species diversity growing or absolute numbers of great Blues? King fishers? What is the connection of green infrastructure to habitat? Bees, butterflies? Have there been marked improvements?
- Mapping of plant data. Are there more trees less trees in the area? Is there more plant coverage now than before? What is the trend? Use LIDAR data.

### Soil Conditions

- Soil and permeability mapping and datasets. How does the rain fall relate to soil conditions? Imperviousness?

### Health & Social Assets

- Health data and trends (e.g. asthma, obesity)
- Mapping demographic and census data on top of precipitation trend data

### Reformatting & Amalgamating Datasets

- Publishing data in formats that models can easily use?
- Combine/merge MRCC's precipitation data, Cook County Precipitation Network data, MWRD data, ISWA data, etc. (basically all rain gauge data in the area) to create an addendum of recent precipitation levels for bulletin 70 - what is currently an actual 5 year, 100 year storm today? Per a conversation Danielle had with Momcilo and John Watson, maybe Mason's work group could initiate a conversation with all potential data parties (including Nancy Westcott ([nan@illinois.edu](mailto:nan@illinois.edu)) to see about this).
- Data gap analysis

The discussion ended with comments by Momcilo Markus from ISWS and Lydia Scott from the Morton Arboretum. Markus wanted to clarify that the new Bulletin 70 is still under negotiation with his assessment of climate change. He stated that Bulletin 70 is led by the Illinois' State Climatologist Office. He said there will likely be a new standard for Chicago specifically, and then another for the rest of Illinois. Markus is willing to provide the Collaborative with updates if and when the new dataset goes public. He also emphasized that the Collaborative should act swiftly to get new datasets adopted by existing regulation so that it can be used as soon as possible. Scott highlighted that there may be an opportunity for intersecting this data with the Arboretum—particularly data they have been collecting with regards to emerald ash borers. With funding they have received from Urban Forests, they are using LiDAR data to measure tree canopy design at the community scale. The data being used has high resolution at .5-meter. They are looking at how canopy density relates to social assets, urban heat island, as well as demographic data. If Blue Island has a comprehensive dataset, they could potentially look into measuring species diversity. The idea would be to analyze and match species with results of the climate models so we can begin to integrate plants that will survive under the conditions of future climate scenarios.

## **Presentation: High Bridge – A Social enterprise organization focused on green infrastructure installation**

High Bridge is a social enterprise with a mission to generate job opportunities that result in public investments and local connections. They recently hired Julia Plumb to lead High Bridge. Two years ago, they worked with Jason Berry to install rain gardens within the surrounding community. The scope of their work encompasses green infrastructure installation and maintenance through the south suburb communities with a focus on hiring local community members. The idea is to build a local labor force, improve an individual's skills and contribute to the local economy. Currently, they are working to install rain gardens and bioswales.

Plumb stated that she had a degree in landscape ecology, has performed urban conservation outreach, and has a skill set in open space and ecological analysis. She has previous experience leading an industrial jobs

committee, and has implemented a series of garden design builds. She emphasized that High Bridge is about connecting communities. They are hiring local community members and intend on interviewing applicants next month. As of now, they have three projects funded through a Great Lake Restoration Initiative (GLRI): 1) Blue Island Parkway; 2) City of Calumet Park's Veterans Park; and 3) a corner lot on S. Clair Blvd. in Robbins. Other projects can be found at South Suburban College, Midlothian Triangle, Blue Island's multi-acre park, and some of South Suburban Land Bank Authority's lots. Plumb emphasized that maintenance is key—High Bridge commits to projects for a year, but will also need to properly educate the public so they can continue the maintenance after the year is up.

High Bridge ultimately sees themselves as another economic development strategy. Some of their partners include Delta Institute, Weaver Consultants, Greencorps, DNR, CNT and Illinois-Indiana Sea Grant. The challenge will be to determine what the economic drive is in the long-term. As of now, the first project has been installed, and 'after' photos will be presented later this summer.

### **Working Group Update: RainReady Community**

Harriet Festing, CNT, indicated that CNT is in their second year developing a replicable mode for stormwater management that is citizen-centric. She mentioned that there were many people (in attendance) that have helped CNT get to where they are today. Festing went on to explain that a citizen-centric approach involves looking at the whole community, and looking at integrate solutions. She stated that RainReady Home is also a part of this work and home assessment reports play a role in the larger RainReady Community plans they are developing. The third component is RainReady Alert, which is a work in progress that provides a platform based on the need for early warning flood sensors that can also help analyze data to predict flooding over time.

Phase I was rolling out RainReady in two communities—the Village of Midlothian and the Chatham neighborhood in Chicago. As of now they are half way through the RainReady process. They have matched up risks, and are looking to finalize the assessment report by next week. Three lessons learned were 1) the power of work with residents (e.g. helping them understand risk and gain support); 2) planning may not be enough to demonstrate the power of change—CNT wants to integrate a placemaking or more tactile urbanism approach to illustrate this change; and 3) a diverse team will be imperative to an effective RainReady Plan. For example, Karen Kreis' existing plans for Midlothian grasped a wide range of solutions that can be integrated with transportation, housing, etc. CNT saw this as an opportunity to bring in their organization's experts in transit and housing to develop the RainReady plans.

### **Next Meeting**

Friday, May 1, 10:00am to 12:00pm

Metropolitan Planning Council

140 S. Dearborn St., Suite 1400

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