Calumet Stormwater Collaborative - Year One Work Plan

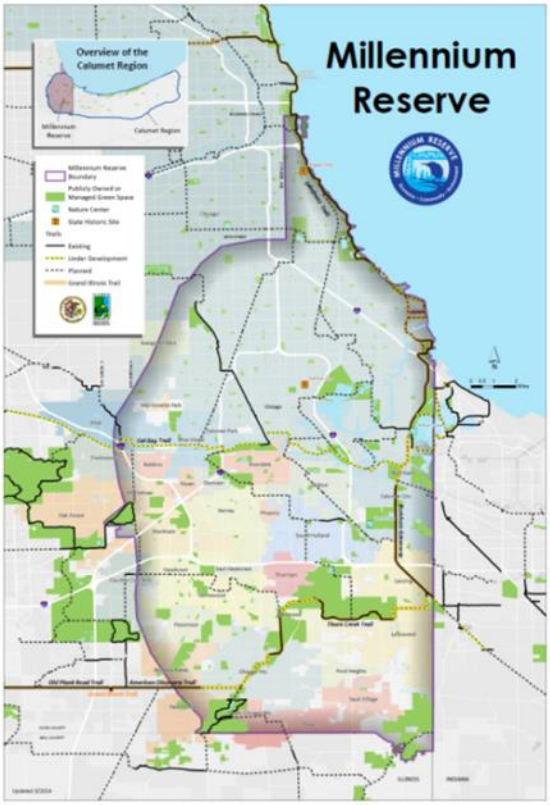
Introduction

Where We Started

The Calumet Stormwater Collaborative, convened by the Metropolitan Planning Council (MPC) with funding from The Chicago Community Trust, was formed to pursue the Millennium Reserve priority to "Improve Stormwater Management through Investments in and Coordination of Green Infrastructure Solutions." Read more about this Millennium Reserve priority and others here. Stakeholders throughout the Millennium Reserve area (see map)— Illinois' portion of the Calumet Region and parts of the Illinois Lake Michigan coast— have to date independently identified a wide range of different stormwater management goals, strategies and tactics. The result has been a lot of activity, but not much impact.

At the outset, the Collaborative was designed to address three central problems: 1) Stormwater overwhelms current infrastructure; 2) Green infrastructure's role in stormwater management is still taking shape; and 3) Coordinated action between government units and other stakeholders controlling land, infrastructure, financing tools and regulatory powers is necessary to solve systemic problems in systemic ways.

Coordination between governments is a fundamental challenge to managing stormwater in any geography, be it a watershed or manmade sewershed. Government units have different regulatory and political pressures with varying financial and technical capacities—absent coordination, inconsistent goals, processes and investments will persist. Other non-government actors also manage land or financing tools, and are just as much a piece of the puzzle.



The Calumet Stormwater Collaborative is comprised of the key stakeholders controlling land, infrastructure, financing tools or regulatory powers related to stormwater. The initial purpose of the Collaborative is to foster awareness of the many ongoing stormwater management initiatives in the Calumet region, forge a shared understanding of terms, establish common goals and identify opportunities to align existing projects (or develop new ones) toward those goals.
The purpose is not to slow individual projects, but to determine whether their outcomes can be leveraged to benefit others—all for the collective good.

Where We've Been

The negative impacts of precipitation, or "stormwater," in the Calumet region and southeast Chicago lakefront, from flooding to poor water quality, result from historic land use decisions, declining infrastructure sufficiency and increasingly severe

storms. Thus the negative impacts are largely an issue of management, rather than the "fault" of the precipitate itself. These drivers work at a larger scale than the scope or jurisdiction of any one organization or agency. Systemic change necessitates solutions at the scale of the problem.

Throughout the exploratory phase – April to August, 2014 – the Calumet Stormwater Collaborative's approach was "go slow to go fast;" taking the time to agree on the definition of the problem and identify root causes allowed the Collaborative to cultivate shared goals and identify opportunities for collective action.

To set the stage, the initial objectives of the Collaborative were to (1) reveal the lack of coherence in defining the problem and (2) make transparent the motivations, both organizational and individual, for participating in this effort. After the introductory meeting, members of the Calumet Stormwater Collaborative discussed the many ways in which "stormwater" is defined and experienced in the Calumet region. It quickly became clear that a common understanding of the problem, and even common terminology, were missing.

Where We Are

Through the course of facilitated dialogue, the Collaborative identified the following three fundamental challenges as those that they, collectively, can make an impact on today, and that but for the intervention of the Collaborative, would not get solved:

- Causes and consequences of non-overbank flooding
- Declining performance and sufficiency of grey and green infrastructure over time
- Drain on public and private resources from repeated ineffective and partial interventions

These fundamental challenges inform everything that follows – these are the problems the Collaborative is working to solve. The Collaborative's goals, optimal conditions, action items and measurable outcomes are all geared toward addressing these three challenges, as well as seeding future coordination by building more consistent dialogue between stakeholders.

Work Planning

Developing a work plan for the Calumet Stormwater Collaborative was a core component of the facilitation work led by the Metropolitan Planning Council, with support from

Calumet Stormwater Collaborative members
as of 3/27/2015

Calumet City
Center for Neighborhood Technology
City of Blue Island
City of Chicago
Chicago Metropolitan Agency for Planning
Chicago Park District
Chicago Wilderness
Cook County
Cook County Land Bank Authority
Delta Institute
Forest Preserves of Cook County
Friends of the Chicago River
Historic Chicago Bungalow Association
Illinois-Indiana Sea Grant
Illinois Dept. of Natural Resources
Illinois Environmental Protection Agency
Metropolitan Mayors Caucus
Metropolitan Water Reclamation District of Greater Chicago
Metropolitan Planning Council
OAI Chicago Southland
Openlands
South Suburban Mayors and Managers Association
U.S. Environmental Protection Agency
U.S. Army Corps of Engineers
Village of Homewood
Village of Midlothian
Village of Park Forest

Motivations for Participating in the Collaborative
as articulated by Collaborative participants

- Discover what others are doing.
- Understand where there is need.
- Find opportunities for collaboration.
- Reduce flooding and combined sewer overflows.
- Leverage, coordinate, and direct funding.
- Ensure water quality and healthy habitats.
- Implement solutions at the regional scale.
- Develop new business opportunities.
- Promote and coordinate planning of green stormwater infrastructure.

Foresight Design Initiative. The purpose of the work plan is to establish a commonly understood logic for how specific action items will relate to each other and contribute to addressing the identified fundamental challenges. The Collaborative also outlined optimal conditions to describe the stormwater management culture we are trying to establish, and laid out means by which to measure our success.

Mission Statement

The mission statement articulates the current purpose of the organization.

The Calumet Stormwater Collaborative builds intergovernmental and cross-sector partnerships to increase the effectiveness of stormwater management initiatives for the communities and ecosystems of the Calumet region through knowledge sharing, coordination and deployment of interventions at appropriate scales.

Vision Statement

The vision statement expresses the desired end-state and is best presented in the future tense.

The Calumet Stormwater Collaborative will be a model of coordinated deployment of knowledge, technology and financial resources to minimize the negative impacts of precipitation and maximize the positive to make the Calumet region a better place to live, work and recreate.

Organizational Principles for the Calumet Stormwater Collaborative

- Uphold the Millennium Reserve mission to integrate economy, community and environment.
- The universe of stormwater solutions includes infrastructural and non-infrastructural options, "grey" and "green," and likely things we haven't thought of yet.
- If we are not improving stormwater management first and foremost, we are not doing our job.
- We will work together to understand causes, barriers, opportunities and desired outcomes. We will work to figure what is happening, what is not, why, and what we need to do about it together.
- The Collaborative should focus on collaborative actions which cannot succeed without participation from multiple parties, including enhancing current activities to have greater impact

Optimal Conditions

If the Collaborative is successful in the pursuit of its mission and vision, the Calumet region's stormwater management culture will be fundamentally altered. The Collaborative established these optimal conditions to describe what that new culture would look like.

- The gap between expected volume of runoff and expected capacity of green/grey infrastructure is eliminated.
- The funding available from public and private resources is prioritized to highest impact, most cost-effective maintenance and capital improvement projects.
- Long-term comprehensive planning for integrated green/gray infrastructure capital improvements increases at multiple levels of government.
- Maximum stormwater management value is derived from existing assets.
- Messages about causes and solutions to fundamental challenges are consistent, shared, and acted upon by Collaborative members.
- The technical, financial and communications capacity for targeted, property-specific green/gray infrastructure improvements increases.

Year One Action Items

The following action items were vetted by the Collaborative, and are now approved as the 2015 Work Plan. Each action item work group is being led by a member of the Collaborative, as noted below.

These action items "passed" the vetting criteria shown in the matrix below. Many of them produce outputs (i.e. new data, new communications materials, funding priorities, etc.) that constitute inputs for another action item.

Mission Driven	Urgency Driven
Does it address our fundamental challenges?	Is it a foundational step?
Does it require collaboration?	Is there temporal urgency?

Together, these action items begin to move the Collaborative and its stakeholders toward the optimal conditions above.

Operational Ground Rules for the Calumet Stormwater Collaborative

- Listen to each other, respect each other's perspectives, and respect each other's time.
- Engage in honest, transparent, thorough and concise internal and external communications.
- Share all relevant information. Ask questions. Do not assume everyone knows what you know or believes what you believe. Explain and inquire as first options.
- All members are expected to participate in all phases of the process.
- You are a conduit to and from the leadership and membership of your organization.
- Be open to abstract thinking, and be willing to think outside your current priorities.
- Respect organizational drivers outside the scope of stormwater management

Foundational, knowledge building actions:

Short-term information sharing and long-term research alignment – Aaron Koch, City of Chicago

- Currently, there is a range of useful info that exists, but it is housed in separate places, which makes accessibility an issue. By developing a list of existing information that could be shared at or between future Collaborative meetings, we can build the total knowledge base of the Collaborative. The group also plans to develop long-term scopes for future research to fill data gaps that are recognized to exist.

Inventory of existing stormwater activities – Josh Ellis, MPC and Mary Pat Mattson, University of Illinois

- Catalog existing stormwater work in the Calumet Area, including on-the-ground projects, planning, policy, and funding efforts in the region.

Capacity building and planning actions:

Fast-tracking Section 319 planning and approval – Bob Newport, US EPA and Amy Walkenbach, Illinois EPA

- Section 319 grants are a good funding source for some forms of green infrastructure in particular, but it is also likely that as Illinois EPA develops protocol for administering loans for stormwater projects through the State Revolving Fund, an approved Section 319 plan will likely be a pre-requisite. At present, none of the six MWRD detailed sub-watershed plans in Cook County are Section 319 approved – the MWRD plans focus on overbank flooding, while Section 319 emphasizes water quality issues. This group is exploring strategies, such as appendices to the existing MWRD sub-watershed plans, which will allow for approval from IL EPA.

Data sharing and modeling – Mason Throneburg, CH2M HILL and Josh Ellis, MPC

- Across the country, more and more stormwater managers are using a range of modeling tools and data sharing systems to enable more proactive, cost-effective capital improvement of green/grey infrastructure. Some stakeholders in the Calumet region are using such tools, other are not. This group is first ascertaining what tools are currently in use, and then offering recommendations on how to build a more coherent, cohesive system to foster more optimization of public investments.

Streamlining green infrastructure design– Vanessa Roanhorse and Matt Harrison, Delta Institute

- There are many design standards for green infrastructure, which can lend itself to inconsistency between units of government, differing performance standards, and other problems. This group is vetting these standards and proposing some usable templates that will streamline the process for prioritization on the benefits of green infrastructure for communities and local decision makers.

Understanding green infrastructure installation, trouble-shooting and maintenance – Margaret Schneemann, Illinois-Indiana Sea Grant and Reggie Greenwood, South Suburban Mayors and Managers Association

- The purpose of this work group is to align the efforts of multiple groups to develop workforce capacity and train volunteers in relation to installation, trouble shooting, and maintenance, primarily of green infrastructure. The defined outcome is to increase the long term effectiveness of green infrastructure.

Developing effective citizen engagement and strategies for planning and implementation– Molly Oshun, CNT and Imad Samara, Army Corps of Engineers

- Lay citizens and stormwater management professionals often have different priorities in relation to stormwater management. Ensuring that the strategies employed by communities meet the priorities and needs of residents and businesses is critical to effective stormwater management. This 'RainReady' project is designing and testing integrated, replicable and scalable models for working with residents and the wider community in risk mapping, planning and implementation – on public and private property – with a particular focus on urban flooding. We are working with two Calumet communities.

Opportunities for near-term Collaborative impact

Lateral line diagnostics and property interventions at scale – Brent Shraiberg and Tim Oravec, MWRD, Office of Commissioner Shore

- MWRD is increasingly focused on reducing Infiltration and Inflow (I&I), and has been encouraging municipalities to conduct smoke testing, as well as other diagnostic tests for I&I. The results of these diagnostic tests – which should provide property owners with sufficient direction to modify something on their property – often do not lead to implementation. This group will develop a more robust program of diagnostic testing, supported by property-by-property assessments of needed modifications, and then support for implementation.

Land banking as a stormwater tool – Alex Simmons, Cook County Land Bank Authority and Emy Brawley, Openlands and Brent Denzin, Ancel Glink

- The mission of CCLBA is to reuse and redevelop abandoned and foreclosed properties so that they are sustainable and efficient. The most relevant component of this process in terms of stormwater is land conservancy. CCLBA needs a process by which to proactively/reactively assess a parcel of land for its usefulness/viability as a stormwater and/or open space asset, as well as the conditions under which various land management agencies might be interested in acquiring land. This group is developing this process.

Success Measures

The following metrics will demonstrate the Collaborative's progress toward achieving its mission and addressing the fundamental challenges it has selected to tackle. Some of these cannot be measured until some of the action items above have been acted upon.

- Reduction in peak wet weather flows
    - Requires short-term information sharing to establish baseline and measure progress
- Reduced risk of basement backups in reasonably expected precipitation events
    - Requires modeling at regional scale to establish baseline, and then requires information sharing to measure progress
- Number of government units with green/gray infrastructure projects embedded in long-term capital improvement plans or comprehensive plans increases
    - Requires inventory of existing stormwater activities to establish baseline, and then requires information sharing to measure progress
- Number of partners using shared messaging
    - Requires effective communications strategies
- Audience reached with shared messages increases, increase in public recognition that we are making progress toward improved stormwater management
    - Requires effective communications strategies
- Reduced reliance on grant funding for green infrastructure installation
    - Requires inventory of existing stormwater activities to establish baseline, and then requires information sharing to measure progress
    - Requires modeling at regional scale to move toward capital improvement planning
- Number of government units using optimization tools (e.g. H&H models) increases
    - Requires inventory of existing stormwater activities to establish baseline, and then requires information sharing to measure progress
    - Requires modeling at regional scale to move toward capital improvement planning
- Increase in connectivity and interjurisdictional partnerships between Collaborative members (i.e. evidence that communication and partnerships between members increases)
    - Requires inventory of existing stormwater activities to establish baseline, and then requires information sharing to measure progress
- Full-time equivalents (FTE) created through this work

CALUMET STORMWATER COLLABORATIVE – APPENDIX A

WORK GROUPS & WORK PLANS

Green Infrastructure Inventory Work Group

Work group lead: Josh Ellis, MPC

Current group members (within and outside the Collaborative): Mary Pat Mattson, University of Illinois

Others to involve: Our group plans to engage agencies and municipalities that may be able to provide data for the inventory

Problem being tackled: There is currently no single source of data for the existing stock of green infrastructure designed for handling stormwater in the Calumet/Millennium Reserve region. A comprehensive inventory of existing programs, and policies to support, require or incentivize the use and maintenance of green infrastructure is needed to provide decision makers with a relevant and easy-to-use data source. Additionally, it appears there is no comprehensive inventory of the locations and types of existing green infrastructure installations (i.e. projects), impairing our ability to assess the existing or future performance of those installations.

Purpose: Other working groups stand to benefit from an easy-to-use, comprehensive source of green infrastructure data, however these groups likely lack time to compile such information, creating a need for our team's research.

Mission/goal: Our group's goal is to produce a source of data that will function as a useful reference to any party wishing to ascertain the region's green infrastructure and potentially draw on this data to inform future planning decisions.

Work Plan

Project 1: Green Stormwater Infrastructure Inventory
Goal: This group's aim is to compile a comprehensive inventory of all existing green stormwater infrastructure in the Calumet/Millennium Reserve region. This inventory will function primarily as a reference for decision makers within the CSC, but may also be a useful reference for stakeholders outside the collaborative with an interest in the region's existing green infrastructure.

Description: The inventory will be a formatted set of data with information on existing green infrastructure projects, policies, and programs.

Benefit: The inventory will provide a comprehensive list of data for the region that will function as an easy reference tool those seeking information about the region's existing green infrastructure.

Scope: The inventory will encompass all available information on GI projects, programs, and policies in the Millennium Reserve region.

Inputs/needs: Our group may benefit from leads from other groups on where to find data for the inventory, however at this point the list of municipalities in the SSMMA and the list of agencies provided by Josh will function as our primary leads for obtaining data.

Outputs/products: The group will produce an inventory cataloging all green infrastructure in the region to be used as a tool both internally within the CSC and externally by any parties interested in this data.

Measuring progress: Our group will define success by an exhaustive, cross-referenced compilation of available data. To some degree, this group will also rely on feedback from Josh and/or other parties within the CSC as to whether the inventory meets their needs.

Timeline/tasks: Our group will produce an initial survey for distribution in March 2015. A final inventory of programs and policies will be prepared by June 1, 2015. An inventory of existing installations of green infrastructure will take longer, depending on access to and usability of existing data.

Additional Information

No additional information was provided by the work group.

Fast-tracking Section 319 Planning & Approval Work Group

Work group lead: Amy Walkenbach, Illinois Environmental Protection Agency

Current group members (within and outside the Collaborative): Josh Ellis, MPC; Scott Ristau and Marcia Willhite, Illinois Environmental Protection Agency; Lisa Cotner, IDNR; Bob Newport, U.S. Environmental Protection Agency

Others to involve: Authors of MWRD detailed watershed plans that encompass sections of the Calumet.

Problem being tackled: There is only one approved watershed based plan located in the Calumet region. Other watershed plans exist—MWRD's detailed watershed plans—however they do not have the nine essential elements to be approved under the Clean Water Act Section 319 nonpoint source program. For example, the plans do identify water quality problems by segment, but the focus is on reducing stormwater in order to improve water quality. By reducing stormwater influences you are reducing pollutant loads, yet those pollutant loads are not articulated in the plans. Therefore, the problem is technical in that there are gaps in existing plans, and amendments need to be written. It is also an institutional problem in that the amendment process is one that is not typically taken, and the amendments will need to be adopted by the governing body.

Purpose: Section 319 funding is an essential avenue for securing funds for green infrastructure investments and water quality improvements. If all nine elements are present in the watershed based plans, and the Plan is considered "approved" by Illinois EPA, the Collaborative would have more opportunities to finance projects in the short and long-term that can improve the cross-jurisdictional governance and the effectiveness of stormwater management throughout the region.

Mission/goal: Revise MWRD's detailed watershed plans within the Calumet so that the Collaborative are eligible to use the Section 319 grants and Illinois State Revolving Loan funds to finance short and longer projects that will work toward minimizing the negative impacts of precipitation and transforming the Calumet region into a better place to live, work and recreate.

Work Plan

Project 1: Amending MWRD Detailed Watershed Plans within the Calumet
Goal: Amend MWRD's detailed watershed plans (Cal-Sag Channel and Little Calumet) within the Calumet so that they incorporate the nine elements required for approval for Section 319 funding.

Description: The working group will be taking an inventory on watershed plans within the Calumet area that are not approved under the Section 319 funding program. Each unapproved plan will be assessed to identify elements that will need to be incorporated in each watershed amendment. Upon this assessment, amendments will need to be articulated and adopted by MWRD.

Benefit: The Collaborative will benefit from additional funding opportunities that will be available with approved watershed based plans. Funds can be allotted to on the ground green infrastructure projects or invested in financing mechanisms that will improve the governance and effectiveness stormwater management across the region.

Scope: The project primarily encompasses the current water quality conditions within the geographic scope of each watershed. It will be entail developing and/or expanding the frameworks of existing plans so that missing elements (amendments) are supported moving forward.

Inputs/needs: Plans will need to include one or more of the following: Additional information on NPS pollutant loads; nonpoint source pollution amounts and reductions for full support of designated uses;

specific practices for nonpoint source project implementation (e.g. streambank stabilization or impervious to pervious retrofits); load reductions (at the individual and aggregated watershed level); identification of projects addressing NPS pollution; identification of critical areas within the watershed and projects of high priority; incorporation of information/education and monitoring activities for the plan implementation; incorporation of an outreach/education component for the plan implementation that focuses on public engagement; develop milestones to measure plan implementation (e.g. water quality monitoring, load reductions achieved, number or size of BMPs implemented, number of people educated, change in behavior); and design a monitoring and evaluation component that will track implementation and restoration progress. Assistance will be needed from Collaborative members that are experts in watershed planning and management, calculating NPS load reductions, water quality monitoring, and BMP design and implementation.

Outputs/products: The outputs of this working group will be amendments—incorporating components listed above—that turn the Cal-Sag Channel DWP and Little Calumet River DWP into approved watershed based 319 plans. An additional output will be increased funding opportunities.

Measuring progress: The work group will define success with the final approval of the plans as watershed based 319 plans. Success will be measured and communicated through a series of updates that will be given to the Collaborative throughout the course of the project.

Relation to other work groups: This work group is related to the data sharing and modeling work group in that modelling techniques can be shared to help with the pollutant load and load reduction calculations. It is also related to the green infrastructure design template work group since design guidelines will directly influence BMP standards incorporated into the revised watershed based plans.

Timeline/tasks: The work group will familiarize themselves with the nine elements required for Section 319 funds; identify the watershed plans that significantly overlap with the Calumet; identify the missing elements within the existing watershed plans; write amendments for the plans; and take the necessary steps to get amendments approved by MWRD—authors of the existing plans currently not approved under Section 319.

Additional information

Both the Cal-Sag Channel and the Little Calumet River DWPs have been reviewed for missing, incomplete information required for an update that would be approvable as a 319 watershed based plan. Currently funding is being sought to support the update process for these plans.

Data Sharing and Modeling Work Group

Work group lead: Mason Throneburg (CH2M HILL) and Josh Ellis (MPC)

Current group members (within and outside the Collaborative): Matthew Bardol, Geosyntec Consultants; Dan Bounds, CDM; Nora Beck, CMAP; Thomas Burke, CBBEL; Anjulie Cheema, CH2M Hill; Josh Ellis, MPC; Sean Kelly, Robinson Engineering; Aaron Koch, CDWM; Dennis Latto, SSMMA; Megan Lewis, Cardno; Peter Mulvaney, SOM; Jason Navota, CMAP; Eric Otto, Cook County Forest Preserve; Brent Shraiberg, MWRDGC; John Watson, MWRDGC; Jeff Wickenkamp, Hey & Associates; Ryan Wilson, Elevate Energy; James Yurik, MWRDGC; Moira Zellner, UIC

Others to involve: The work group continues to grow; the above have attended at least one meeting of the working group.

Problem being tackled: 1) Lack of hydrologic and hydraulic models to support and prioritize investment for many communities throughout the Calumet; 2) Lack of consolidated information about planning tools where they do exist; 3) Challenges and impediments for sharing data to support stormwater planning; and 4) General absence of consistent or defined metrics for level of service or quantification of potential benefits.

Purpose: The Modeling and Data Sharing work group focuses on how models, tools, and data can be developed and applied to support the overall objectives of the Collaborative. Much as the Collaborative focuses on those tasks which would not occur but for the existence of such a coordinated planning body, this work group will focus on connections between systems (e.g. surface and sub-surface systems, community systems and regional interceptors and/or tunnel systems) that may exceed the purview of any one agency or community. The working group will facilitate stormwater planning informed by its system-wide context, as well as developing a technical basis for the prioritization and selection of stormwater solutions.

Mission/goal: The working group strives to support science-based decision making and investment in stormwater solutions within the Calumet Stormwater System

Work Plan

Project 1: Existing Modeling Mapping Layer
Goal: The goal of this project is to provide a consolidated, easy to understand definition of where hydrologic and/or hydraulic modeling exists in the Calumet area.

Description: Although hydrologic and hydraulic models, and indeed other types of models, exist throughout the Calumet service area, there is no consolidated index of models and their extents. This project will build upon the collective knowledge of the work group members to develop such a 'geospatial index' of existing models and tools as well as metadata for understanding their purpose and inputs.

Benefit: This mapping layer will help stormwater planners understand where models already exist, and enable the integration of past efforts- whether applying previous models, integrating these models into new studies, or referencing studies/reports developed from these models- to support current and future planning.

Scope: A geodatabase will be developed including a feature class with attributes summarizing key information regarding previous models. The feature class will be populated in a manner so as to be useful to both technical and non-technical audiences.

Inputs/needs: The working group has already compiled a summary of models being used by different working group members and agencies. At present, this compilation is only textual, however in many cases geospatial data does exist to represent the modeled extents. In general, obtaining existing data from members will be required to populate the feature class; in some cases, areas may need to be digitized.

Outputs/products: A geodatabase with existing model feature class. Metadata will be provided to summarize how this feature class was developed, as well as a protocol for updating the layer in the future.

Measuring progress: Success will be defined based upon the completeness and accuracy of the feature class, and our ability to include all relevant input from members. An indicator of success is whether planners (including consultants, public works directors, and agencies) use the layer to discover modeling extents and/or obtain models or summary documentation. At present, a quantitative measure of success has not been defined.

Relation to other work groups: Information-sharing and Research: This dataset will be a key resource for the Collaborative; we will want to ensure that this related working group includes the layer in its list of resources. In addition, there is relevance to the 'Inventory of Existing Stormwater Activities' effort, as one purpose of the models is to help assess and prioritize potential projects.

Timeline/tasks:

Task	Additional Notes	Target Completion Date
Identify models in use in study area	List of models being used in the study area has been compiled based on survey to members of working group in 2014.	Completed
Define feature class attributes	What fields (and data types) will be stored in the layer? This will include information such as when the model was developed, owner, point of contact, data inputs, and links to any publically available study.	Completed
Populate feature class	Using existing data where possible, and newly digitized features where necessary, the It is anticipated that working group members will provide data from their agency (with internal approvals as necessary) to the task lead to consolidate into one feature class	6/1/15
Document and Protocol for Update	Concise document of how this layer was generated, anticipated updates in the future, and how these updates should be managed (for instance, if a model is updated, additional detail is added, or its extents are modified, how this is represented in this layer.	6/29/15
Publish layer	Publish layer in SSMMA viewer and/or make accessible for download	7/27/15

Project 2: Calumet Stormwater Collaborative Mapping Viewer

Goal: This task will provide accurate, relevant geospatial data related to stormwater management in an easy to use map viewer.

Description: The SSMMA has developed several specialized mapping viewers related to stormwater planning, using ESRI's ArcGIS Online platform. The work group would collaborate with SSMMA to develop a mapping viewer for use by the Collaborative.

Benefit: This viewer will enable Collaborative members to rapidly understand stormwater management problems, or potential solutions, in their geographic context. Members will benefit from the availability of relevant data, and this tool will facilitate discussion and planning that is based upon the best available information throughout the study area.

Scope: Data layers will be identified and consolidated; many may already be in possession of SSMMA. Some data layers may have access restrictions; management and sharing of sensitive layers will be managed through a system of 'user groups' with varied access rights.

Inputs/needs: Members will need to share existing data or data developed as an activity of the Collaborative. The Stormwater activities inventory, field services at scale, and information sharing working groups should all be aligned with this effort.

Outputs/products: Mapping viewer accessible to working group members.

Measuring progress: Visits to the web-site can be quantified to demonstrate the utility of the website. However, the real value of the mapping viewer will be in its contribution to substantive, data-driven discussion regarding stormwater planning objectives.

Relation to other work groups: We will communicate with the aforementioned working groups to solicit data layers and suggestions regarding the viewer.

Timeline/tasks:

Task	Additional Notes	Target Completion Date
Layer identification	Draft list of layers, and working group review.	2/6/15
Obtain available data layers	Compile actual layers, prioritizing 'public domain' layers or those shared without access restrictions.	5/29/15
Develop user-group access approach	Develop user categories which will provide differential access to sensitive layers based upon need. Coordinate with any agencies that may be willing to share layers with restrictions to understand their restrictions.	6/5/15
Prototype using public domain data sources	Develop prototype using layers that can be shared without access restrictions.	7/3/15
Feedback from members	Solicit feedback and suggestions from Collaborative members regarding data, look and feel, and usability of mapping viewer. Discuss input and make decisions about modifications to the tool.	8/25/15
Prototype using public and restricted access data	Roll-out of a version of the tool that provides different levels of access to underlying data.	10/23/15
Maintenance and Updates	Update layer inventory as needed	Continuing

Project 3: Data Sharing Portal

Goal: Develop an organized, accessible, and well-documented portal for data to support stormwater planning.

Description: The working group will compile data layers applicable to stormwater planning into a single data portal. The group will work across existing resources and networks, and/or seek out new ones that have the ability and capacity to host and maintain a large data portal, as well as provide assistance in the portal's interface development.

Benefit: The data sharing portal will enable members to easily discover and access relevant data, and particularly, value-added data layers which take effort to produce. In many cases, such data layers exist, and data-owners are willing to share this data, however time/availability/staff resources can slow down obtaining

needed data. This effort will enable better stormwater planning by facilitating more efficient access to needed data.

Scope: As noted above, the principal product is a web portal for accessing shared data. The data portal should not be redundant with existing access portals; for instance, if an existing website/portal supports the access to a particular data layer, it would be a better use of resources to link to that data source.

Inputs/needs: The Data Sharing Portal will need a variety of data layers. The work group will be compile a data wish list for layers that are not readily accessible. In addition, the group will need an IT solution for hosting the data and any interface that is needed.

Outputs/products: The outputs of this working group will be a website and/or FTP like network resource for data sharing. It will include an index of available layers and metadata.

Measuring progress: Visits to the portal can be quantified to demonstrate the utility of the service. Metrics on volume of data downloaded can also be produced and charted temporally and potentially geographically. However, the real value of the mapping viewer will be in time saved, for both the data requestor and the 'requestee' (who would have serviced the request in absence of the portal), as well as better decision-making based upon the best available information.

Relation to other work groups: The Data Sharing Portal will need to obtain the information from the other subgroups of the Model and Data Sharing Working Group as well as other Collaborative groups to know what information will be available and populated in the portal. Without the information from other groups, it will be difficult to provide significant useful information on the portal.

Timeline/tasks:

Task	Additional Notes	Target Completion Date
Review of draft and comment by work group	Discuss at late Feb/early March meeting. Key issues include: how does this effort complement existing data repositories? What are the tradeoffs with cost for different potential solutions?	3/13/15
Aggregate data and links to data	Includes decision-making regarding what data to host on the portal and what to link to. In addition, obtain any approval required by data owner	6/30/15
Beta release of data portal	Beta release of the portal will be released, along with guidance on use and request for suggestions.	10/9/15
Feedback on beta portal	Solicit input from collaborative members	11/20/15
Release full portal	Go live with revised portal	2/19/16

Project 4: Technical support and vision

Goal: Offer technical assistance and guidance (particularly on tool application and planning approaches) to those that will be using the newly developed stormwater datasets and models.

Description: This last task reflects the working group's ability to provide technical guidance regarding how models and tools can most effectively be applied, or developed when necessary, to support stormwater planning in the Calumet region. This may largely be the IEPA funded project, subject to the funding availability.

Benefit: The depth and diversity of background of members of the work group can be leveraged to ensure that models developed for the Calumet region are useful in the ways most meaningful to stakeholders in this region. Furthermore, this group can help add rigor to discussion of green infrastructure investment-important to help guide discussion of the benefits of green infrastructure with informed understanding of

costs and benefits of both green and grey technologies, and the understanding that these technologies need to be deployed intelligently and in concert with one another to maximize benefits for the region. This transitions us from a discussion of why GI is good (or bad), to how a range of infrastructure options provide stormwater benefits as well as contribute to overall well-being of communities.

Scope: The scope of this project will primarily be geared toward the end-users of the tools and datasets developed by the work group. This could include members of the Collaborative as well as the general public.

Inputs/needs: A list of FAQs, technical fact sheets that walk users through different procedures (including a model's inputs and outputs), protocols for troubleshooting, and descriptions that articulate the purpose and conceptual model of each tool.

Outputs/products: 1) Specific definition of potential metrics (a draft exists, however it needs to intersect more with a desired level of service; and 2) Guidance and review documents as needed

Measuring progress: The group will define success based on the number of times the group provides guidance to a government unit, business or other non-government entity. The effectiveness of the guidance can be measured by the participant's ability to carry on the tasks or project after guidance is sought. The group can also look at the types of questions/guidance that need to be given and see if any particular requests for assistance decline over time. These metrics connect with the agreed-upon Success Metrics by helping track the number of government units or partners using optimization tools, or are involved with green/grey infrastructure projects. They also can provide a basis of analysis for determining if there is a change (decline) in grant funding allocated for green infrastructure installation.

Relation to other work groups: The products of this group are relevant to the Green Infrastructure Design Template work group as well as Green Infrastructure Installation, Troubleshooting and Maintenance Training work group.

Timeline/tasks: A timeline and list of tasks for this project will be articulated later in the 2015 year.

Additional Information

No additional information was provided by the work group.

Green Infrastructure Design Template Work Group

Work group lead: Delta Institute – Matthew Harrison, Vanessa Roanhorse

Current group members (within and outside the collaborative): John Watson, MWRD; Bob Newport, EPA; Amy Walkenbach, IEPA; Tom Price, Conservation Design Forum; Edith Makra, MMC; Eric Otto, Forest Preserve District of Cook County; Lisa Cotner, IDNR; Josh Ellis, MPC; Reggie Greenwood, SSMMA; Jason Berry, City of Blue Island; Bryan Swanson, City of Calumet City; Dawn Hanley, City of Riverdale; Stan Urban, City of Dolton; Mary Ryan, City of Calumet Park; Ernestine Beck-Fulgram, City of Robbins; Robinson Engineering, Hancock Engineering; Alliance of the Great Lakes; ; Madeleine Mahan, Friends of the Chicago River

Others to involve: This work group would like to involve all municipal managers, administrators and municipal departments interested in utilizing green infrastructure within their communities. The group would also like to coordinate with the group that manages and updates the IL Urban Manual. They want to make sure that the templates work lines up well with the IL Urban Manual so efforts are not duplicated.

Problem being tackled: There is a need for communities to have user friendly tools to help make decisions on what types of green infrastructure instruments will provide optimal stormwater management. There is a lot of existing information that needs to be reviewed and organized in order to identify BMP and template opportunities. If technically sound, templates can be developed and shared with communities; this will produce efficiencies in terms of planning and designing projects, and obtaining needed project approvals.

Purpose: 1) Reduce design redundancies and build and align off existing work. 2) Coordinate and identify opportunities to insert templates into community processes or find alternative places to host templates for long term access. 3) Meet with communities on the ground to understand their needs more clearly. 4) Develop draft templates and seek feedback from technical experts and other stakeholders. 5) Finalize templates and determine effective mechanisms for widely share the templates and facilitating their use.

Mission/goal: Provide community level design templates to implement green infrastructure to help manage stormwater issues.

Work Plan

Project 1: Develop Green Infrastructure Design Guidelines via RFQ
Goal: Seek out green infrastructure design templates that are tailored to the coastal grant region and have a positive impact on the Illinois coastal zone and beyond.

Description: Templates will be pursued through a Request for Qualifications (RFQ) that will identify qualified and experienced engineering and/or landscape architecture teams that can develop analysis, design and construction bid documents for green infrastructure opportunities or overflow control strategies to be customized and implemented on vacant land, brownfields or other parcels.

Benefit: Pre-design green infrastructure design documents are one way to reduce transaction and design costs while implementing green infrastructure solutions. The winning candidate will develop green infrastructure templates that will enable users—including the Collaborative and Calumet region at large—improve environmental and water quality through the reduction of stormwater runoff.

Scope: The scope of this project will be the Calumet region of the Illinois Coastal Zone and communities in southern Cook County. Delta's work with municipalities is focused on providing tools and building capacities to develop and implement impactful projects.

Inputs/needs: This work group will need input from work group members, local communities, and other stakeholders on the practices for which templates would be most useful. Later in the year, input will be needed to obtain feedback on draft version of the templates.

Outputs/products: Deliverables from the contracted team will include: 1) a brief design report; 2) non-site specific design documents (civic details, landscape details, cross-sections, plan drawings, templates, and specifications) for 3-5 green infrastructure or overflow controls strategies applicable to vacant land parcels (examples include bioswales, rain gardens, permeable pavers, and other green infrastructure stormwater catchment methods); and 3) example construction bid documents including estimates cost of materials and alternatives for customization.

Measuring progress: The success of the work group will initially be measured by the completion of the tasks identified in the project timeline. The group will give the Collaborative updates through the RFQ process on important deadlines, the winning team selected to develop the templates, opportunities for members to give input and feedback, as well as opportunities for outreach. After deliverables are complete, success can be measured by the number of effective projects implemented using the design templates.

Relation to other work groups: Deliverables from the contracted team will have a positive impact on the efforts of the Land Banking work group, such that the documents and guidelines will account for the customization and implementation of green infrastructure on vacant lands as an alternative land management strategy. These documents will also influence the deliverables that will be developed with the Green Infrastructure Installation, Troubleshooting and Maintenance Work Group. It will be prudent for the work group to align design standards with educational materials.

Timeline/tasks:

Task	Additional Notes	Target Completion Date
Review existing green infrastructure manual	All work group members send in any templates, toolkits, or manuals that support green infrastructure design templates	Completed
Develop the Request for Qualifications (RFQ)		Completed
Release RFQ		Completed (1.16.2015)
Deadline for inquires via email		Completed (1.16.2015)
Deadline for Submitted Statement of Qualifications		Completed (1.16.2015)
Presentations to Delta		Completed (2.3.2015 and 2.4.2015)
Award of Contract		Completed (February 2015)
Develop BMP Templates	Coordinate with group responsible for IL Urban Manual	April 2015
CSC Working Group input on the 3-5 designs and applications	Delta Institute Offices – 35 E. Wacker Drive, Ste. 1200	April 2015
CSC Working Group review of additional toolkit materials	Delta Institute Offices – 35 E. Wacker Drive, Ste. 1200	April-May 2015
CSC Working Group outreach opportunities	TBD	May 2015
Estimated deliver of final product		June 2015
GI Toolkit Roadshow in the Calumet Region to test effectiveness and seek to implement GI	TBD	August 2015
Review examples of success and challenges	Delta Institute Offices – 35 E. Wacker Drive, Ste. 1200	September 2015

Identify best opportunities to host GI toolkit	Delta Institute Offices – 35 E. Wacker Drive, Ste. 1200	September 2015

Additional Information

No additional information was provided by the work group.

Land Banking Work Group

Work group lead: Josh Ellis, MPC

Current group members (within and outside the collaborative): Alex Simmons, Cook County Land Bank Authority (CCLBA); Josh Ellis, MPC; Emy Brawley, Openlands; Brent Denzin, Ancel Glink

Others to involve: CCLBA Board of Directors and Sustainability Committee

Problem being tackled: The Calumet region currently does not have a system in place to proactively and reactively assess the suitability of vacant land for use as stormwater management, nor a protocol in place that would allow land managers (e.g. park districts, gardening groups, and community groups) to search for vacant lands that would fit their needs and interests—whether it be related to stormwater management, wetlands restoration, or enhancing biodiversity—and systematically secure the land to pursue their respective interests.

Purpose: Land bank authorities within the Calumet region—Cook County Land Bank Authority and the South Suburban Land Bank—have access to thousands of vacant lots and are looking for support from the Collaborative to develop projects and programs to move vacant lots through to new productive uses in order to help stabilize neighborhoods, whether it be by managing stormwater or local job creation. Many of the vacant lots are dispersed, and therefore, are unlikely to be candidates for assemblage for larger projects at the local government or institutional scale; however numerous may have potential to improve stormwater management given that they are located in floodplains or flood-prone areas where stormwater detainment can be vital. Given that many of the vacant lots are unlikely to be candidates for re-development in the near- or long-term future, finding non-development productive uses (community gardens, parks, urban agriculture, rain gardens, etc.) have emerged as a primary method of transitioning vacant land from blight to a neighborhood asset.

Mission/goal: The mission of the work group is to create a program that would address the dispersed vacant lots by providing local land managers the opportunity to secure land through land banks for stormwater management projects and neighborhood greening. The two primary goals of this work group are to 1) Establish a methodology that land banks—particularly the Cook County Land Bank Authority and the South Suburban Land Bank—can use to assess the suitability of vacant lands, particularly for stormwater management; this will entail the development of a tool that enables land banks to vet and match lands based on the lands' physical traits and user's interests; and 2) Develop a protocol that land banks can use to reliably process, organize and release vacant land holdings to interested parties.

Work Plan

Project 1: Methodology and Tool for Assessing the Suitability of Vacant Lands
Goal: The work group's goal is to develop a methodology and corresponding tool that enable land banks within the Calumet region to assess the suitability of vacant lands for stormwater management, as well as systematically and effectively providing future land managers with a vetted selection of lands suitable to their needs and interests.

Description: Currently the Cook County Land Bank Authority has an interactive mapping platform that allows the general public to seek out vacant land and foreclosed properties throughout Cook County. The Collaborative would like to develop a similar tool and methodology that the two lands banks in the Calumet region (Cook County Land Bank Authority and South Suburban Land Bank) can use to find vacant lands that are suitable for land managers based on their interests (whether it be stormwater management of neighborhood greening) and the physical characteristics and conditions of the vacant parcels.

Benefit: This project will help put vacant lands throughout the Calumet region into more productive uses. The Collaborative is particularly interested in releasing land to land managers who want to repurpose the land in a way that can improve local stormwater management, improve the aesthetics of a neighborhoods, enhance ecosystem services, and serve as a catalyst for local job creation (e.g. urban agriculture). It can also serve as a model to be implemented in other areas throughout the region impacted by vacancy, climate change and the mismanagement of stormwater.

Scope: The scope of this project includes the region's existing vacant lands—including city-owned and privately owned properties, as well as foreclosed and tax-delinquent/scavenger properties. Beyond the members of this work group, the project will encompass other agencies and governing bodies that have and are willing to provide data on the properties of focus. Once the project is developed and realized, it will also encompass a wide range of land managers interested in the land banks' vacant land holdings.

Inputs/needs: This work group will could use the data compiled from the Data Sharing and Modeling Work Group. The group will also will need assistance in the acquisition data the will help provide a comprehensive representation of the physical characteristics and legal status of vacant lands. The work group will need to work together, internally, to identify existing models, determine the criteria that reflects the interests of different land managers, and input all of the compiled information into a tool that works fluidly to meet the group's intended goals.

Outputs/products The product of this work group's efforts will be a report articulating the methodology and a preliminary mapping tool and database that can be used by the land banks' staff.

Measuring progress: The group will define success by its ability to produce the associated products within the year 2015. Ongoing success can be measured by the number of vacant lands that were repurposed to improve stormwater management and neighborhood greening. These improvements can be measured by calculating how much stormwater was captured by the repurposed lands, and/or the reduction of peak wet weather flows resulting from repurposed land. Success can also be measure by counting the number of new partnerships at the local and regional level transpire from this tool and methodology. Measuring success with these metrics compiles with and responds to the agreed-upon Success Metrics for the Collaborative as a whole. If success is measure in these ways, this will require identifying each vacant parcel's (or at least each parcel being released to a land manager) capacity of to infiltrate, detain, and/or retain stormwater. This will help establish a baseline for determining the effectiveness after the land has been repurposed. Developing this baseline could be accomplished using the Collaborative's stormwater modelling tools (under development) and/or expertise in H&H modelling.

Relation to other work groups: This project relates to other work groups in that it will eventually identify and provide local community groups and organizations with parcels that can be used for installing green infrastructure, and/or improving communities by turning vacant properties into community assets—such as the provision of new open space, or catalysts for job creation, increased property values and stormwater infrastructure improvements. Additionally, this project can benefit from the green infrastructure template design work group, given that their outputs and products will include design templates specific to installing green infrastructure on vacant land. The project can also be used alongside the efforts of the RainReady Work Group to engage residents and present an opportunity for community groups to partake in the local management of stormwater.

Timeline/tasks:

Task	Additional Notes	Target Completion Date
Review relevant land banking models that currently exist	(e.g. Pittsburg, Philadelphia, and Cleveland)	May 2015
Establish sets of criteria that reflect the needs and interest of different land managers	Criteria should be specific to each land manager/user group—including the physical traits and conditions of the land being assessed.	May 2015

Determine what kind of platform and/or GIS support tools will be used for suitability analysis	Platform selection will help determine weighting mechanisms and procedures	May 2015
Compile the necessary data to accurately represent the criteria identified for each land manager type.	Data will need to be formatted in accordance to the platform used for suitability analysis (visualizing and vetting vacant lands)	June-July 2015
Assign values and weights to criteria	Decide whether or not to include and weight preferences	June-July 2015
Have a fully functioning tool that land bank staff can use	Modelling tool should be verified and validated with initial datasets.	Aug-Sept 2015
Continue ongoing evaluation of land banking program	Validation will be critical as new land managers (and criteria) are added	Ongoing

Project 2: Protocol for Acquiring and Maintaining Vacant Lands

Goal: The second goal is to develop a protocol that existing and future land banks can use to reliably and legally process, organize and release vacant lands to interested parties.

Description: Once a methodology and tool is developed for vetting and matching land managers with vacant lands that are suitable for their needs and interests, a procedure needs to be set that outlines how land banks process newly acquired land, advertise available land, and issue parcels to interested parties through an equitable and legal process. This will also include developing a set of rules and regulations, i.e. similar to a lease agreement, that outline the rights and responsibilities that each respective party should uphold through the landholding agreement.

Benefit: Establishing a protocol that land banks can follow when they acquire new vacant as well as when there is an opportunity to release property to a land manager ensures that the program is sustainable and works within the context of existing local and regional governance. This project warrants the productivity of the work group's first goal, and will thereby, help put vacant lands throughout the Calumet region into more productive uses, such as green infrastructure that will improve the communities' management of stormwater.

Scope: This project encompasses future land acquisitions, vacant land holdings currently available through the region's land bank authorities, as well as future land managers interested in acquiring vacant parcels. Members of this work group will need to work closely with land bank staff, as well as local and regional officials that administer and currently regulate land use laws and ordinances.

Inputs/needs: As long as the Data Sharing and Modelling Work Group assists in the collecting the necessary data for representing land characteristics and land manager's interest and needs [see Project 1], the group does not need any substantial help form other work groups to carry out this goal. The work group will need members who are experts in land use law and drafting legal documents and/or ordinances. It will be essential to articulate protocols in way that complies with the language of existing governance, but also is clear and hospitable to all types of land managers.

Outputs/products: The products of this work group's efforts will be: 1) A report that identifies existing regulations that are relevant to the land banking program and presents a framework in which the program can fit within current policies; and 2) based on findings, a white paper that can be used to prompt new policy that supports the land banking program at the County level; and 3) A handbook that documents the procedures and regulations that land banks and future land managers would need to follow to sustain a land banking program in Cook County.

Measuring progress: The group will define success by its ability to produce the deliverables within the timeline presented below. Success can be measured by the number of government units that accept or are willing to adopt policy change that will support a land banking program (and protocol). Other measures of success can be the number of government units that than incorporate this program in long-term capital improvement or comprehensive plans, as well as the calculated increase in connectivity and interjurisdictional

partnerships between Collaborative members resulting from the tool and program at large. As noted by the agreed-upon Success Metrics, there would need to be an inventory of existing stormwater activities and partnerships (before the execution of this project) so a baseline for measuring success can be established.

Relation to other work groups: This project is relevant to the Green Infrastructure Inventory group in that their findings would help establish the baseline for measuring this work group's success. It is also closely related to the Green Infrastructure Installation, Troubleshooting and Maintenance Training Work Group and Green Infrastructure Design Template Group in that their outputs are likely going to influence certain procedures and responsibilities that land managers will have to uphold—for example, installation and maintenance requirements associated with the placement of a stormwater retention or detention basin on vacant land.

Timeline/tasks:

Task	Additional Notes	Target Completion Date
Identify all existing ordinances and regulations that are relevant to a land banking program	Determine whether or not a land banking program would fit under current land use regulations	May-June 2015
Draft a white paper and language that would legally support a land banking program in Cook County (optional*)	*Based on findings from task above. If it is note need, move on to next task.	June-July 2015
Develop a handbook of procedures, rules and regulations for land banks and future land managers to follow		Aug-Sept 2015
Continue ongoing evaluation of land banking program	Ensure that language is up-to-date as program becomes more established.	

Additional Information

No additional information was provided by the work group.

Green Infrastructure Installation, Troubleshooting and Maintenance Training Work Group

Work group lead: Margaret Schneemann, Illinois-Indiana Sea Grant and Mollie Dowling, OAI

Current group members (within and outside the collaborative): Emy Brawley, Openlands; Lisa Cotner, Illinois Department of Natural Resources; Sarah Coulter, Park Forest; Josh Ellis, MPC; Daniel Goldfarb, Wildlife Habitat Council; Reggie Greenwood, South Suburban Mayors and Managers Association; Mary Ellen Guest, Chicago Bungalow; Edith Makra, Metropolitan Mayors Caucus; Julia Plumb High Bridge / OAI, Inc.; Nancy Williamson, Chicago; Ryan Wilson, CNT Elevate Energy; Mark Willobee, Geosyntec; Daniella Pereira, Openlands; Jamie Zaplalusch, Openlands

Others to involve: South Metropolitan Higher Education Consortium

Problem being tackled: More financing of green infrastructure installation in communities is occurring, and we need to determine the adequacy of workforce/volunteer capacity to meet demand.

Purpose: To ensure long term functionality/cost-effectiveness of and commitment to green infrastructure by aligning workforce development, volunteer training and professional certification to improve green infrastructure installation, troubleshooting and maintenance capacity within the Calumet Stormwater Collaborative region.

Mission/goal: The mission of this work group is to conduct a needs assessment analysis of the CSC stormwater industry, focusing on gathering information from both existing data sources and the green stormwater industry. The current gaps and challenges that the CSC could help overcome will be identified, and recommendations made. This project has been identified by the ITMT Taskforce group as a foundational programmatic step to ensure that resulting training and workforce development efforts are in alignment with the CSC region's occupational and employment needs, partnerships and existing trainings are effectively leveraged, and trainings are in accordance with demand drivers, skills gaps, design standards, municipal regulations, and the regional policy environment. This project will use both existing data (from the industry, Census, and other sources) as well as conduct surveys to gather additional data within the CSC region (of those who drive demand for GI, manage GI infrastructure, and deliver GI services) and make this data readily available.

Work Plan

Goal: By December 2014, articulate the long-term goal and develop an ITMT programmatic logic model to better understand existing capacity, most effective short- and medium-term actions, and additional resources and information to accomplish outcomes. Within one year, conduct a needs assessment.

Description: The work group will be developing a logic model to clearly articulate the steps that will be needed to successfully conduct a needs assessment to better understand the existing efforts related to green infrastructure installation and maintenance, and the overall demand for the green infrastructure training, support programs and services

Benefit: This project will benefit the Collaborative by identifying the needs of the immediate Calumet communities with regard to green infrastructure installation, troubleshooting and maintenance. The Collaborative will also develop a more comprehensive understanding of the demand for these tools and services, as well as pinpoint areas within the ITMT agenda that need more attention from the Collaborative. While the goal of this project will be piloted in the Calumet, it will also develop a framework and protocol that can be implemented within communities outside of the Calumet.

Scope: Target audiences include: 1) Municipalities and other organizations funding and implementing green infrastructure (e.g., MWRD); 2) Workforces providers of green infrastructure installation, troubleshooting and maintenance; 3) Volunteer providers of green infrastructure installation, troubleshooting and maintenance; 4) Community residents; and 5) Private providers of green infrastructure installation, troubleshooting and maintenance.

Inputs/needs:

Expertise/time of*:*

- GI stakeholders
- Community Colleges & universities
- Educators/subject matter experts/professionals
- Volunteer leaders
- Extension agents and Master Gardener/Master Naturalist program
- Municipalities/local government

Collaboration:

- between organizations with stormwater management interests, particularly those implementing green infrastructure and those that can provide services
- Partner with existing non-profit sector (i.e. Greencorps Chicago) efforts.

Funding:

- Funding needed for activities to support program outputs
- Tuition for students to participate in trainings
- Identify long-term/sustainable funding mechanisms for supportive services for green infrastructure

Outputs/products: Products of the group's efforts will include: 1) A programmatic logic model and 2) a needs assessment.

Measuring progress: Progress will be defined and measured by the completion of the products outline above. As a result of these products, the CSC will know the workgroup's objectives, outputs, and outcomes, and the ITMT workgroup/CSC will better understand GI ITM demand and the region's ability to meet this demand.

Relation to other work groups: The efforts of the work group align with the goals of and work being done by the following groups and initiatives:

- OAI Workforce program (Mollie/Reggie/Holly)
- South Metropolitan Higher Education Consortium
- IDNR community college/certification project (Nancy)
- Wildlife Habitat Council's corporate certification/recognition programs (Daniel)
- Citizen commissions (Edith)
- IISG Lawn to Lake Master Gardener (Margaret)
- CNT Rain Ready Homes/Wetrofit (Ryan)
- MPC study of stormwater incentive programs (Josh)

Timeline/tasks:

Green Infrastructure Installation, Troubleshooting & Maintenance Logic Model	
December 2014 -2015	• Articulate the long-term goal and develop an ITMT programmatic logic model • Conduct a training needs assessment • Identify and articulate the mechanisms by which to train service providers and who would need to do what

Additional Information

See Appendix C for the work group's preliminary programmatic logic model.

Community Engagement, Planning and Implementation Work Group: RainReady

Work group lead: Molly Oshun, Center for Neighborhood Technology (CNT); Imad Samara, U.S. Army Corps of Engineers

Current group members (within and outside the Collaborative): Molly Oshun, CNT; Imad Samara, U.S. Army Corps of Engineers; Edde Johnson, Greencorps Chicago; Michael Berkshire, Department of Planning, City of Chicago; Reggie Greenwood, SSMMA; Molly Dowling, OAI; Julia Plumb, High Bridge; Karen Kreis, Village of Midlothian; Mary Ellen Guest, Historic Chicago Bungalow Association (HCBA); Ryan Wilson, Elevate Energy; Cedric Robinson, MWRD; Ron David, IEMA; Intel; Schneider Electric; Sprint; Janus RC and various resident groups.

Others to involve: We will be strengthening our links to other working groups during 2015.

Problem being tackled:
We are seeking to help property owners and communities address the combined challenges of non-overbank and overbank flooding, as well as the drain on public and private resources as a result of repeated, ineffective, partial stormwater interventions.

CNT's analysis – *The Prevalence and Cost of Urban Flooding* – suggests that these challenges are prevalent across communities in the Calumet region. Our conversations with communities and residents' groups, suggests that they lack a simple and effective 'whole community' approach to tackling the problems, which are technical, social and political in nature.

We have been working in two communities in the Calumet region - Midlothian in the southwest suburbs and Chatham in the Chicago South Side - for one year, building public support and gathering data to enable wider action. Both communities are affected by non-overbank flooding, Midlothian also suffers overbank flooding. Both are struggling to address the problems and residents and community leaders are interested in working with us to design solutions. See videos of residents in the communities telling their stories: http://rainready.org/videos-urban-flooding-and-activism. We expect to be expanding this work in 2015 to other communities in Cook County.

Purpose: Our purpose is to design and test an effective, replicable, affordable and public-friendly service—'RainReady'—to help homes, businesses and communities in the Calumet region and beyond find solutions to too much or too little water, with a focus on too much water and urban flooding. The services we are developing are based on lessons learned from analogous programs used in the energy and transportation sectors, specifically energy efficiency retrofitting of homes and complete streets programs. RainReady Home is a home upgrade service to help homeowners mitigate flooding on their property using landscape, plumbing and building solutions; RainReady Community helps neighborhoods upgrade public and private property through risk mapping and comprehensive planning; RainReady Alert is a real-time flood risk monitoring and alert system. Together these programs offer residents, and communities, popular and pragmatic ways of upgrading homes and neighborhoods (primarily using green infrastructure) for improved quality of life. The suite of RainReady services are being tested by CSC partners in Midlothian and Chatham.

Mission/goal: See goals below in Project 1.

Work Plan

Project 1: RainReady
Goal: The goals are to 1) Design and test RainReady services in two pilot communities in the Calumet region, as a replicable model for the region; 2) Develop two community-wide RainReady plans, one for each

community, based on stormwater modeling/data/community needs; 3) Assess up to 45 at-risk homes; 4) Train and employ Greencorps Chicago trainees in making these upgrades; 5) Design and test the RainReady Alert platform; 6) Design and test a risk/impact model for measuring the impacts of the upgrades and to inform wider data/research needs; 7) Film/photograph and document the work for wider dissemination; and 8) Generate useful data and information that can inform CSC working groups.

Description: *RainReady* is service provided by CNT that will help communities (Currently Chatham and the Village of Midlothian) develop strategies – including incentives, projects and financing mechanisms – that will help the community minimize the negative impacts of urban flooding and heavy precipitation.

Benefit: Beneficiaries of RainReady include: Homeowners who have reduced property flooding; the residents of the communities of Midlothian and Chatham who are beneficiaries of a RainReady Plan of action to reduce neighborhood flooding; the wider residents and communities in the Calumet region who can benefit from the roll-out of the RainReady service; the trainees from Greencorps Chicago who get new skills and employment from the home upgrades; the working group partners who can apply their expertise/get applied data to inform their work plan; and the EPA who benefit from improved stormwater retention; and FEMA who will benefit from more resilient communities less susceptible to disasters.

Scope: RainReady will work at the scale of the community—identifying ways that stormwater infrastructure can be integrated into community-based projects, such as roadway improvements or new development. This will includes projects that take place on public and privately owned properties.

Inputs/needs: The work group would need expertise in modelling/data, research, land banks and job training, green infrastructure design and templates, and smoke testing and downspout disconnections.

Outputs/products: Forty-five home assessment reports (upgrades depend on additional funing), two RainReady Plans, one Greencorps training curriculum on home upgrades, and 30 Greencorps trainees trained (subject to funding), updated how-to guidance on developing a RainReady Plan, 3 videos, a photo-library, one risk-impact model, 20+ residents with sensors installed through RainReady Alert and a unified sensor platform.

Measuring progress: Reduced flooding/volumes of water captured in properties with home upgrades. Financial investment in made in green infrastructure in the two pilot communities. Expressed interest and indication of willingness to invest in RainReady services from other communities in the Calumet region. Homes will be in the two communities monitored and evaluated to gather this data. Baseline data is currently being gathered.

Relation to other work groups: Land banks and job training; green infrastructure design and templates; smoke testing and downspout disconnections are particularly relevant.

Timeline/tasks: The Rain Ready Pilot Project began in September of 2014; by the end of 2015 we expect to have: 1) Developed two RainReady Community plans, carried out 45 property assessments; 2) Designed a risk/impact model; 3) Started early design and testing of RainReady Alert in Midlothian; 4) Started training Greencorps/OAI trainees; 5) Made videos and created a photo-library of the work. In the second year we will continue to develop and refine the RainReady strategies while expanding the program to other communities in the Calumet region.

Additional information

Who within the Collaborative is currently working on this general topic, what are they doing, what is the goal and what is the output? RainReady draws together the breadth of challenges and actions being addressed by CSC, as applied to two communities in the Calumet region. We anticipate working with the land bank group (there are many fore closed properties in Midlothian), the stormwater modelling work

(the Army Corps will be preparing risk maps of the communities), and the research and data group (we will be installing rain gauges, gathering data points and monitoring the upgraded properties), among others.

Can existing projects be combined? Are there any existing projects that seem to be working at cross purposes? RainReady could help inform and provide a test case/data source for other working groups e.g. by working with Greencorps/OAI/SSMMA, we could not only train Greencorps trainees to do some of the home upgrades, but we could also help generate data on the employment implications of home upgrades using green infrastructure. We could also be a test-case for mapping/modelling urban flooding risks and smoke testing/downspout disconnections.

What resources (funding, time, materials, etc.) could be brought to bear on this? The RainReady project was one of 4 selected nationally as part of the Army Corps of Engineer's 'Silver Jackets' program, which aids coordination between federal agencies. As a result, the Chicago District of the Corps is contributing substantial time towards the project. We will be leveraging funding from the Surdna Foundation and FEMA, Boeing, and Prince Charitable Trusts.

Is there background research that needs to be done before other actions are taken? No, this is a 'shovel ready' style project, although there would be helpful research that could be done in parallel, e.g. in quantifying the job and maintenance implications of home and neighborhood upgrades.

CALUMET STORMWATER COLLABORATIVE – APPENDIX B

RECOMMENDATIONS FOR PLANNING SUPPORT THROUGH COOK COUNTY'S CDBG DISASTER RECOVERY ACTION PLAN – 8.22.14

The Calumet Stormwater Collaborative, facilitated by the Metropolitan Planning Council (MPC) and comprised of the key stakeholders controlling land, infrastructure, financing tools or regulatory powers related to stormwater, was selected as one of the priority projects by the Millennium Reserve Steering Committee. The initial purpose of the Collaborative is to foster awareness of the many ongoing stormwater management initiatives in the Calumet region, forge a shared understanding of terms, establish common goals and identify opportunities to align existing projects (or develop new ones) toward those goals.

Cook County's CDBG Disaster Recovery Action Plan is a unique opportunity to advance several of the planning priorities established by the Collaborative to date. The goals of the Collaborative, which are still being refined, include: a measurable increase in communities with long-term capital improvement plans and local comprehensive plans that substantively address stormwater management; increasing municipal access to external funding sources to address a backlog of stormwater-related investment and maintenance needs; and increasing capacity and sophistication of property-by-property assistance to solve specific stormwater challenges where they start. All of these efforts would go a long way to minimizing the likelihood of future flooding-related disasters, while simultaneously supporting response and recovery to past events.

While all of the suggestions below will benefit the Calumet region of Cook County, in truth they will benefit municipalities, businesses, residents and ecosystems throughout the entirety of the county. This letter does not contain any suggestions on specific capital improvement projects. The recommendations here focus specifically on means of support to build local and regional capacity for stormwater-related planning.

Recommendations:

- **Provide support to enhance municipal capacity to mitigate harmful impacts of stormwater through local comprehensive planning and capital improvement planning.** Many communities in Cook County, and particularly in the Calumet region, do not have local comprehensive plans or capital improvements that proactively direct municipal resources towards policy changes, land uses or gray/green infrastructure projects that will mitigate harmful impacts of stormwater runoff. There are many reasons for this – varying staff capacity, insufficient financial resources, uncertainty about what policy or infrastructure choices most optimally solve a given stormwater challenge, and the extent to which interventions other than infrastructure investments (i.e. building code changes, land use changes, etc.) can aid in meeting stormwater goals. In the near-term Cook County can take several useful steps towards resolving these planning capacity challenges:

- **Support an expansion of the Chicago Metropolitan Agency for Planning's capacity and expertise in stormwater management.** Through its Local Technical Assistance program CMAP assists many communities with zoning code reviews, comprehensive plan updates, open space plans, transportation studies, land use plans, and more. These are all opportunities to more proactively integrate stormwater management issues into broader local development decisions. At the moment CMAP does not have any dedicated financial support for building its own stormwater management expertise. A CMAP LTA program that can more robustly and substantively support land use decisions, zoning reforms and other stormwater-related municipal choices can complement the infrastructure-focused planning support increasingly available from the Metropolitan Water Reclamation District, and in so doing more comprehensively prepare Cook County communities to address stormwater challenges.

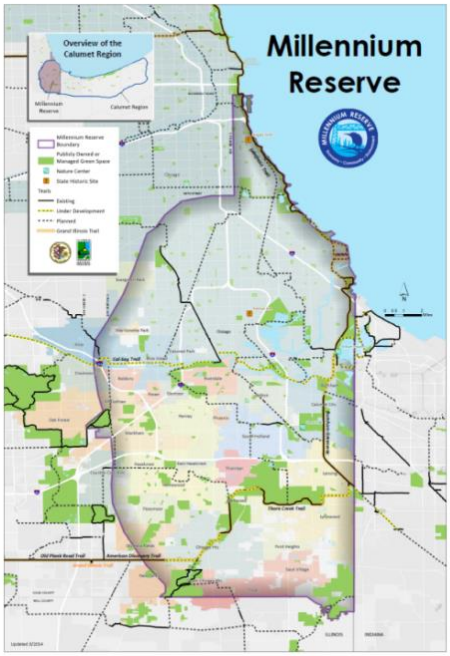
- **Leverage the City of Chicago's past investment in Flow Path modeling by replicating that study throughout the remainder of Cook County.** The Chicago Dept. of Planning and Development invested approximately $50,000 to conduct Flow Path modeling for Chicago; the result is a better understanding of the movement of sheet flow across the natural and disturbed surfaces of the city. While ultimately most gray/green infrastructure decisions are made through a more complex optimization process that accounts for flow of water throughout the underlying sewershed, Flow Path modelling is a valuable near-term step that can immediately assist in identifying prudent locations for green infrastructure practices, open space investments, vacant lot reutilization, and more. This information can also eventually serve as an input into sewershed optimization.

- **Support the development of sewershed optimization tools in Cook County municipalities.** The City of Chicago has a robust set of modelling tools to inform more optimal investments in gray and green infrastructure, which enables more efficient public expenditures and targeted solutions to specific problems. MWRD has a comparable system for its own infrastructure, and has access to the City's tools. For the most part, suburban Cook County does not have the same capacity for data and goal driven investment. In many communities, the result is a largely reactionary approach to addressing the most recent storm event, rather than a forward-looking, planned and deliberate set of infrastructure investments and policy choices. By providing financial support to Cook County communities interested in building modeling tools comparable to Chicago's, the county will improve decision making about, performance and cost-effectiveness of gray or green stormwater infrastructure.

- **Provide support to amend or modify existing watershed plans in order to bring them into compliance with U.S. EPA and Illinois EPA standards.** At the federal and state levels certified watershed plans enable projects and communities accounted for in those plans to be eligible for implementation funding through Section 319 of the Clean Water Act. This funding can support a range of green infrastructure and riparian improvements. Moreover, as Illinois EPA develops rules and project selection criteria for funding stormwater infrastructure projects through the State Revolving Fund and Clean Water Initiative, it is extremely likely that having an approved Section 319 watershed plan will be a pre-requisite for funding eligibility. At present almost none of Cook County is accounted for by an existing Section 319 plan. However, MWRD has six detailed sub-

watershed plans that contain some aspects of a Section 319 plan. U.S. EPA and Illinois EPA are interested in amending those existing MWRD plans so that they might be approvable under Section 319. That requires some additional research and planning to account for water quality improvements, educational programming and other required elements of a Section 319 plan.

- **Provide support for large-scale diagnostic testing of private lateral line condition, primarily in MS4 communities, and property-by-property implementation support.** Many private lateral lines are broken or otherwise nonfunctioning, and in municipalities with separate storm systems, many downspouts are inappropriately connected to the waste sewer. These, among other causes, contribute to infiltration and inflow, which is a major source of inefficiency and reduced capacity in waste sewers. Diagnostic tests such as smoke tests or use of video cameras can detect misconnected or broken pipes, and done at significant scale – whole blocks, whole sewersheds, whole municipalities – can be used to prescribe property-by-property solutions to reduce or slow the amount of stormwater entering the sewer system. This needs to be at significant scale in order to be truly valuable to the public at large, and the recommendations of these diagnostic tests need to be implemented to be valuable in any way.



Implementation will truly differ from property to property – in some instances a simple downspout disconnection will suffice, in some a rain garden may be warranted, in some a new lateral line may be necessary. By supporting municipality-wide, sewershed-wide, or interjurisdictional partnerships to conduct these diagnostic tests and then provide targeted, tailored, property-specific implementation, Cook County can play a major role in significant stormwater management improvements. The diagnostic tests themselves are a natural partnership with MWRD and municipal governments, while the implementation will require broader coordination with groups like the Cook County Master Gardeners (a University of Illinois Extension program), CEDA, GreenCorps, or other hands-on implementers.

Natural disasters, once immediate pain, suffering and loss have been addressed, often create opportunities for thinking and investing differently in the manmade and natural systems affected by those disasters. With stormwater and flooding in particular, all climate and precipitation projections suggest that Cook County can expect larger, more impactful storm events in the future. Cook County can support recovery while also building the capacity of local and regional governments to manage those future storms better, limiting future damages.

The members of the Calumet Stormwater Collaborative appreciate your consideration of these planning support recommendations, and look forward to discussing them further. Thank you.

For more questions contact Josh Ellis, Metropolitan Planning Council, jellis@metroplanning.org, (312) 863.6045

Calumet Stormwater Collaborative Members

Center for Neighborhood Technology
City of Blue Island
City of Calumet City
City of Chicago
Chicago Metropolitan Agency for Planning
Chicago Park District
Chicago Wilderness
Cook County
Cook County Land Bank Authority
Delta Institute
Forest Preserves of Cook County
Friends of the Chicago River
Historic Chicago Bungalow Association
Illinois-Indiana Sea Grant
Illinois Dept. of Natural Resources
Illinois Environmental Protection Agency
Metropolitan Mayors Caucus
Metropolitan Water Reclamation District of Greater Chicago
Metropolitan Planning Council
OAI Chicago Southland
Openlands
South Suburban Mayors and Managers Association
U.S. Environmental Protection Agency
U.S. Army Corps of Engineers
Village of Homewood
Village of Midlothian
Village of Park Forest

CALUMET STORMWATER COLLABORATIVE – APPENDIX C

ADDITIONAL WORK GROUP MATERIALS

Green Infrastructure Installation, Troubleshooting and Maintenance Training Work Group

Logic Model: Preliminary Draft

Green Infrastructure Installation, Troubleshooting & Maintenance Training Logic Model	
Current Conditions	• Insufficient planning and budgeting for Green Infrastructure troubleshooting & maintenance. • Green Infrastructure's role in stormwater management is still taking shape. • Coordinated action between government units and other stake holders is necessary to solve systemic problems • More financing of GI installation in communities is occurring; for example, MWRD rain barrels. Based on previous program evaluation, foresee issues with lack of maintenance. • Who can property owners call with questions about GI?
Current Efforts	• OAI Workforce program (Mollie/Reggie/Holly) • South Metropolitan Higher Education Consortium • IDNR community college/certification project (Nancy) • Wildlife Habitat Council's corporate certification/recognition programs (Daniel) • Citizen commissions (Edith) • IISG Lawn to Lake Master Gardener (Margaret) • CNT Rain Ready Homes/Wetrofit (Ryan) • MPC study of stormwater incentive programs (Josh)
Objectives	By December 2014-2015, articulate the long-term ITMT goal and develop an ITMT programmatic logic model to better understand existing capacity, most effective short- and medium-term actions, and additional resources and information to accomplish outcomes. Within one year: • Catalog existing programs, how they interrelate and identify gaps • Establish partnerships among ITMT service provider groups, as well as between them and the entities funding, regulating and installing green infrastructure • Identify specific opportunities to test out partnerships between ITMT service providers and funders/implementers • Conduct a training needs assessment

	• Identify and articulate the mechanisms by which to train service providers and who would need to do that. After one year: • Train volunteers and develop workforce in installations, troubleshooting, and maintenance of green stormwater infrastructure. • Ensure availability of this workforce for ongoing ITMT needs, including advertising their availability and purpose. Target audiences: 1) Municipalities & other organizations funding and implementing green infrastructure (e.g., MWRD) 2) Workforce providers of GI ITMT 3) Volunteer providers of GI ITMT 4) Community residents 5) Private providers of GI ITMT
Inputs	Expertise/time of*:* • GI stakeholders • Community Colleges & universities • Educators/subject matter experts/professionals • Volunteer leaders • Extension agents and Master Gardener/Master Naturalist program • Municipalities/Local government. Collaboration: • between organizations with stormwater management interests, particularly those implementing green infrastructure and those that can provide services • Partner with existing non-profit sector (i.e., Green Corps) efforts. Funding: • Funding needed for activities to support program outputs • Tuition for students to participate in trainings • Identify long-term/sustainable funding mechanisms for supportive services for green infrastructure
Outputs	1) Needs assessment • to expand/improve knowledge of Current Efforts • To characterize the target audience: a) What are roles of workforce versus volunteer groups? (differences and overlaps) b) Identify knowledge gaps certification/credentialing training requirements c) Identify financing options 2) Conduct Marketing Study (Sufficiency of demand for training certification to support programs; who are the 'buyers' of GI services? (private companies, municipalities, non-profit); What is the geographic extent of the market – can demand for services outside the Calumet support funding of training within the Calumet?) • Look at existing programs elsewhere • Assess current conditions in region 3) Pilot trainings and revise based on evaluation

	4) Marketing Strategy • Advertising availability of workforce/free service 5) Distributed Educational Materials: • Certification training PowerPoints, workshop binders. ○ Credentialed training (Curricula, syllabi, etc.) • Volunteer training • municipal outreach presentation • Homeowners?
Impacts	<u>Short Term Impacts (learning/knowledge)</u> 1) Increased municipal awareness of ITM needs/performance standards for undertaken GI projects and any policy barriers to getting ITMT done. 2) Workforce providers of GI 3) Volunteers/Master Gardeners will be able to demonstrate GI and answer resident questions about GI. 4) Community residents know where to get information/Greater awareness as informational materials are distributed to the public <u>Midterm Impacts (actions)</u> 1) Municipalities: • Recommend certification/training for appropriate personnel (help drive programmatic demand) • Address/remove policy barriers to GI in their communities • Budget appropriately for the full-life cycle costs of GI infrastructure 2) Workforce GI providers will be able to do GI ITM in accordance with design standards and municipal regulations. 3) Volunteers/Master Gardeners will be able to demonstrate GI on private property and answer resident questions about GI. 4) Community residents will be more involved in GI ITM. <u>Long Term Impacts (change in condition)</u> • Communities have adequate access to ITM services to meet ongoing GI needs.