CHICAGO'S GREEN STORMWATER INFRASTRUCTURE MAINTENANCE WORKING GROUP

A Multi-agency Effort to Address Coordinated Maintenance for Green Stormwater Infrastructure in Chicago The activities described in this report were supported by grants and philanthropic funding for Space to Grow partners, Healthy Schools Campaign and Openlands. The partners are grateful for their leadership and support.

All photos courtesy Space to Grow.

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The work that has been completed and detailed in this report is critical to moving Chicago forward as a leader in the green stormwater infrastructure field. The partners thank every participant, contributor, reviewer and thought partner who provided their time, expertise and enthusiasm toward this initiative, the majority of whom volunteered their time to do so.

Primary Author

Healthy Schools Campaign

GSI Working Group Co-Convenors

Healthy Schools Campaign Openlands City of Chicago, Office of Climate and Environmental Equity (OCEE)

Facilitation + Documentation Support

Daylight

GSI Working Group Participants (Current as of July 2023)

Chicago Department of Assets, Information and Services (AIS) Chicago Department of Transportation (CDOT) Greencorps Chicago Greencorps Chicago Not for Profit Chicago Public Schools (CPS) Chicago Department of Planning + Development (DPD) Chicago Department of Water Management (DWM) Chicago Department of Streets + Sanitation (DSS) Metropolitan Water Reclamation District of Greater Chicago (MWRD) Chicago Park District (CPD)

Nonprofit Partner Participants (Current as of July 2023)

Current Metropolitan Planning Council (MPC) OAI, Inc.

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EXECUTIVE SUMMARY

Executive Summary

Background

Green stormwater infrastructure (GSI) is a key tool for cities like Chicago to combat a number of coastal resilience challenges, including urban flooding, combined sewer overflows and other environmental impacts of climate change. As GSI is adopted more widely, it is important to consider ways to ensure its sustainability and long-term efficacy. Too frequently, GSI projects are installed without the necessary maintenance resources, staffing and plans in place, which can lead to problems within just a few years of installation leaving many GSI projects to fall short of their potential. When GSI fails or falls short, the communities in the greatest need of these mitigation efforts bear a compounded burden as the infrastructure fails to provide the benefits and resilience it was designed to address. In addition, GSI that is lacking maintenance contributes to a perception that GSI is a weak strategy or prone to failure, which then leads to a lack of further investment in this important infrastructure.

Chicago has a profound flooding problem caused by poorly drained surfaces due to flat topography, highly impermeable surfaces, an increase in frequent, high-intensity storms and an aging and undersized combined sewer system - all of which threaten the health of communities, Lake Michigan and Chicago Area Waterways (CAWs). While the Metropolitan Water Reclamation District of Greater Chicago (MWRD) and the City of Chicago have invested billions of dollars in deep tunnel, reservoir and sewer construction projects to reduce the impacts of flooding, more work is required to meet the area's stormwater management needs. Chicago has a history of disinvestment in low-income communities and communities of color, where the impacts of climate change are having the greatest damaging effects. As climate change continues to significantly increase the frequency and intensity of major storm events, the impact will disproportionately fall on Chicago's Black and Latinx communities; it is increasingly evident that new strategies and investments are needed to build community and climate resilience across the city.

CITYWIDE GSI MAINTENANCE COORDINATION: NEEDS + CHALLENGES

The City of Chicago has acknowledged the multiple co-benefits of green stormwater infrastructure to address its pressing resilience challenges. The city has emphasized the importance of GSI in citywide strategies such as <u>Resilient Chicago</u>, <u>Sustainable Chicago 2015</u> and the City of Chicago <u>Green Stormwater Infrastructure Strategy</u>, as well as the <u>Chicago Recovery Plan</u>, each of which note pressing resilience challenges for the city:

- Reducing disparities between Chicago's neighborhoods
- Addressing the root causes of crime and violence
- Ensuring investment in critical infrastructure particularly climate resilience infrastructure
- Supporting engaged, prepared and cohesive communities

Across the board, stakeholders from public agencies and their partners who work on GSI in the Chicago region agree that there must be a shift in the way GSI maintenance is prioritized, valued and addressed; that there is a need for a citywide GSI maintenance coordination effort in Chicago; and that maintaining GSI assets is critical to the city's climate resilience infrastructure. The establishment of a central point of coordination or accountability to lead the Chicago region's GSI maintenance efforts could follow an approach similar to those taken in peer cities such as New York, Philadelphia and Washington DC, which have strategic plans for designing, building and managing GSI. Key issues that have routinely been flagged include:

- The need for a dedicated agency or a staff position among the agencies that "owns" or coordinates GSI across the city
- The need for dedicated funding and resources for GSI installation and maintenance
- An over-reliance on uncompensated community stewards to maintain GSI
- The need for a well-trained workforce to maintain GSI installations
- The need for a responsive, cross agency database of existing GSI

WORKING TOWARD A SOLUTION TO COORDINATED GSI MAINTENANCE

Since 2019, <u>Healthy Schools Campaign</u> (HSC) and <u>Openlands</u> - as part of the <u>Space to Grow</u> partnership - have worked with the Chicago Mayor's Office to co-convene a multi-agency Green Stormwater Infrastructure Maintenance Working Group (Working Group) to develop a comprehensive plan for maintaining GSI across the city of Chicago. Many public agencies across Chicago recognize the value that GSI installations bring to the region, and several agencies have made significant capital investments to install new GSI to help build community and climate resilience. But few agencies have allocated the necessary resources to maintain these important assets in a sustainable and consistent manner. However, green stormwater infrastructure IS infrastructure and should be funded and valued as such by public agencies and maintained by trained professionals.

HSC and Openlands worked with the the City of Chicago's Office of Climate and Environmental Equity (OCEE) to co-convene the Working Group to continue to work on these critical issues. Nine public agencies participate in the Working Group's effort around GSI maintenance coordination, all of which have some role in funding, planning or building GSI in the City of Chicago. With the exception of MWRD (a regional entity) and the Chicago Park District, none of these agency partners have dedicated GSI staff whose role is solely dedicated to GSI.

The Working Group initially divided the work into four main subcommittees: 1) Mapping, Data + Inventory; 2) Workforce Development + Training; 3) Guidance + Standardization; and 4) Funding + Policy. These subcommittees were designed to support distinct areas of focus or work to contribute to a more coordinated approach to GSI maintenance in the city. Due to capacity and timing limitations of the participants, the Working Group decided to table the Guidance + Standardization committee work for the moment, and focus on building out the other three committees in early 2023.

From December 2022 through May 2023, the co-conveners hosted and facilitated two Working Group and eight committee meetings, and conducted a survey of the Working Group. This work surfaced a number of barriers and opportunities to promote better coordination and funding for GSI maintenance for the Chicago region.

GSI WORKING GROUP OUTCOMES: DECEMBER 2022-MAY 2023

Each of the committees surfaced a number of priorities and activities that can be addressed in the near- or long-term, which are detailed in this report. After the committee work concluded, the co-conveners developed, disseminated and analyzed a survey to better understand the participants' preferences on next steps and direction. The full survey results are included in the Appendices section of this report, and the broad takeaways follow.

There was broad agreement that there is a need for a citywide GSI maintenance coordination effort in Chicago, and that maintaining GSI assets is critical to the city's climate resilience infrastructure. Respondents felt that the OCEE, DWM, CDOT and MWRD bear the most responsibility to coordinate a citywide GSI maintenance effort.

An interesting takeaway from the survey indicated that while the Mapping, Data + Inventory committee agreed that starting with a static database of GSI assets would be a sufficient start, the broader group recognized more urgency for an interactive or more dynamic map or system to develop the GSI baseline inventory.

Survey respondents identified the following as the top near-term (6-8 months) challenges for the Working Group to address:

- #1: Lack of funding allocated for maintenance of GSI assets
- #2: Lack of a dedicated point person (position), department or office that is responsible for GSI
- Tied for #3: Lack of centralized data system/inventory for tracking GSI assets and their maintenance needs
- Tied for #3: Difficulty with establishing inter-agency or cross-departmental agreements to allow for cooperation or coordination to maintain GSI assets

Respondents identified the following three near-term actions that could help address these needs:

- Build a dynamic, spatial inventory (interactive map) of public GSI across the city that includes the current site condition and can serve as the basis for operationalizing GSI maintenance
- Convene a task force of public agency leaders from the city's sister agencies and MWRD to identify a point position, department or office to be responsible for GSI maintenance coordination efforts
- Further research GSI maintenance and associated funding models from across the country (such as One Water framework, Joint Benefits Authority, etc.)

Looking beyond the near-term, the survey respondents offered ideas for other topics and other ways the Working Group could work together, which included:

- Hosting an online forum or platform for collaboration (e.g., Slack channel or Google group) among passionate individuals from across the agencies to serve as a place to share resources and ideas with each other.
- Continuing to share and highlight successful models and examples of GSI projects, and conduct site visits of successful models of GSI.
- Developing a collaborative pilot project to include training of Greencorps, or other similar organizations, to support work offered by municipal contracts.
- Developing a GSI (or nature-based solutions) plan that addresses maintenance with actionable steps, with the intention of MWRD and City of Chicago working in partnership on this.

GSI MAINTENANCE WORKING GROUP: WHAT COMES NEXT

The Working Group participants made it clear through their survey responses and contributions at the meetings that this initiative is important, valued and would see continued participation from the members. The next step is to work with the new Mayoral administration to prioritize this effort and develop a work plan for future Working Group efforts. The Working Group agreed to begin reconvening regular meetings in August 2023, and identified action items and complementary efforts/initiatives that would take place in preparation for those meetings.

The Working Group has built great momentum, and with the recent change in Mayoral administration and influx of federal funding being made available, this is an opportune time to move this group into action.

NEAR-TERM RECOMMENDATIONS + NEXT STEPS

- Continue regular Working Group and committee meetings, with the goal of moving to authorize one agency or department to house and lead the effort starting in 2024.
 - HSC, Openlands and OCEE to continue to co-convene through 2023.
- Consider convening a task force with public, advocacy, community and philanthropic representatives to develop an updated green stormwater infrastructure strategy that includes longterm sustainable funding for maintenance; conduct more research and/or feasibility studies on inter-agency coordination models and/or distinct GSI department within an agency.
 - Funding + Policy committee members could establish a task force to address these issues, and could consider applying for grant funding to support.
- Explore and work collaboratively to compete for federal funding for this work, including a potential workforce development pilot focused on GSI initiatives at Space to Grow sites.
 - CPS, DWM, MWRD, CDOT/Greencorps, OAI and Current to collaborate on this effort.

- Conduct more research into the U.S. Water Alliance's One Water initiative; determine whether/how Chicago can align.
 - HSC, Openlands and OCEE lead, with Funding + Policy committee.
- Provide more GSI industry leadership development for public agency staff, such as participation in the Green Infrastructure Leadership Exchange or attending national conferences focused on GSI and other water industry issues.
 - DWM, CDOT, MWRD, OCEE, AIS and DPD staff to consider participation.



BACKGROUND + CONTEXT SETTING

Introduction

Green stormwater infrastructure (GSI) is a key tool for cities like Chicago to combat a number of coastal resilience challenges, including urban flooding, combined sewer overflows and other environmental impacts of climate change. As GSI is adopted more widely, it is important to consider ways to ensure its sustainability and long-term efficacy. Too frequently, GSI projects are installed without the necessary maintenance resources, staffing and plans in place, which can lead to problems within just a few years of installation leaving many GSI projects to fall short of their potential. When GSI fails or falls short, the communities in the greatest need of these mitigation efforts bear a compounded burden as the infrastructure fails to provide the benefits and resilience it was designed to address. In addition, GSI that is lacking maintenance contributes to a perception that GSI is a weak strategy or prone to failure which then leads to a lack of further investment in this important infrastructure.

Chicago has a profound flooding problem caused by poorly drained surfaces due to flat topography, highly impermeable surfaces, an increase in frequent, high-intensity storms and an aging and undersized combined sewer system - all of which threaten the health of communities, Lake Michigan and Chicago Area Waterways (CAWs). While the Metropolitan Water Reclamation District of Greater Chicago (MWRD) and the City of Chicago have invested billions of dollars in deep tunnel, reservoir and sewer construction projects to reduce the impacts of flooding, more work is required to meet the area's stormwater management needs. Chicago has a history of disinvestment in low-income communities and communities of color, where the impacts of climate change are having the greatest damaging effects. As climate change continues to significantly increase the frequency and intensity of major storm events, the impact will disproportionately fall on Chicago's Black and Latinx communities, and new strategies and investments are needed to build community and climate resilience across the city.

Since 2019, <u>Healthy Schools Campaign</u> and <u>Openlands</u> - as part of the <u>Space to Grow</u> partnership - have worked with the Chicago Mayor's Office to co-convene a multi-agency Green Stormwater Infrastructure Working Group (Working Group) to develop a comprehensive plan for maintaining GSI across the city of Chicago. Many public agencies across Chicago recognize the value that GSI installations bring to the region, and several agencies have made significant capital investments to build new GSI to help build community and climate resilience. But few have allocated the necessary resources to maintain these important assets in a sustainable and consistent manner.

This report outlines the work and outcomes to date of this multi-agency Working Group effort, and recommends next steps for moving this important work forward and fully investing in the long-term benefits of GSI. A list of all the current (as of July 2023) Working Group members can be found in the Appendices section of this report.

CITYWIDE GSI MAINTENANCE COORDINATION: THE NEED

The City of Chicago has acknowledged the multiple co-benefits of green stormwater infrastructure, and has emphasized the importance of GSI in citywide strategies such as <u>Resilient</u> <u>Chicago</u>, <u>Sustainable Chicago 2015</u> and the City of Chicago <u>Green Stormwater Infrastructure</u>

as well as the <u>Chicago Recovery Plan</u>, each of which note pressing resilience challenges for the city:

- Reducing disparities between Chicago's neighborhoods
- Addressing the root causes of crime and violence
- Ensuring investment in critical infrastructure particularly climate resilience infrastructure
- Supporting engaged, prepared and cohesive communities

A number of Chicago agencies, including the Department of Planning + Development, Department of Water Management, Chicago Public Schools, Chicago Park District and the Department of Transportation, as well as the regionally focused MWRD, have invested in and continue to build GSI throughout Chicago as a means to address myriad challenges, including Chicago's persistent urban flooding and stormwater management issues. Through a number of programs, including Space to Grow, Green Alleys and Resilient Corridors, Chicago has made significant investments in GSI for more than a decade.

While this significant investment is an important start to address Chicago's pervasive urban flooding issues, there has not been a consistent and comprehensive citywide investment in the long-term maintenance of these GSI assets, a plan for inventorying GSI installations across the city nor the establishment of a trained workforce prepared to take on this work. The city also still needs a consistent design strategy for building GSI, which would allow for a more coordinated and consistent approach to maintaining the installations.

Chicago's GSI maintenance challenges are mirrored regionally and at a national level in cities across the country. As cities recognize the co-benefits and multiple returns on investment that GSI brings, more and more are installing GSI to capture stormwater, support climate resilience and address water management issues. However, proper maintenance of these installations is a substantial undertaking that frequently is not fully planned nor fully funded, which can lead to resistance or hesitance to continue installing GSI. The maintenance of any type of new infrastructure is important to consider, and developing a plan and long-term funding to support this maintenance is critical.

CITYWIDE GSI MAINTENANCE COORDINATION: THE CHALLENGES

Across the board, stakeholders from public agencies and their partners who work on GSI in the Chicago region agree that there must be a shift in the way GSI maintenance is prioritized, valued and addressed; that there is a need for a citywide GSI maintenance coordination effort in Chicago; and that maintaining GSI assets is critical to the city's climate resilience infrastructure. Key issues that have routinely been flagged by the Working Group include:

- The need for a dedicated agency or a staff position among the agencies that "owns" or coordinates GSI across the city
- The need for dedicated funding and resources for GSI installation and maintenance

- An over-reliance on uncompensated community stewards to maintain GSI
- The need for a well-trained workforce to maintain GSI installations
- The need for a responsive, cross agency database of existing GSI

Nine public agencies participate in the Working Group's effort around GSI maintenance coordination, all of which have some role in funding, planning or building GSI in the City of Chicago. With the exception of MWRD (a regional entity) and the Chicago Park District, none of these agency partners has staff whose role is solely dedicated to GSI. The lack of a central point of coordination or accountability has led Chicago to fall behind peer cities such as New York, Philadelphia and Washington, DC in having a strategic plan for designing, building and managing GSI.

A key issue raised early on by the Working Group is the need for a better understanding of when GSI funding for maintenance is needed most. Unlike traditional "gray" infrastructure projects, which may not need significant maintenance for many years (but may thereafter often require large and costly repairs), GSI projects, especially those that use more natural, living or nature-based elements, need time to establish properly after installation. These types of GSI projects require a consistent level of proactive maintenance or management, especially in the first three-to-five years, and relatively low-cost maintenance thereafter. It can be difficult to convey the importance and benefits of planned, rather than deferred, maintenance to decision makers when budgeting; agencies may also find it challenging to determine if and when GSI maintenance funding should be allocated to capital or operating budgets.

One key culture shift that the Working Group is prioritizing is the need for public entities to take full responsibility for the long-term maintenance of GSI they install. For too long, GSI has been seen as something that communities could manage or steward, rather than as critical infrastructure that requires professional maintenance. GSI is often not conceptually framed as an infrastructure project, but is "sold" as more of a community development or beautification initiative. While community support is essential and many GSI installations present opportunities for community volunteerism and stewardship, this cannot substitute for a maintenance program. The capacity of the community to provide no-cost labor is inconsistent, training is not available and the funding is scarce for these groups. Relying on community members or community groups to maintain such critical infrastructure is not only unsustainable, it perpetuates the disparities in infrastructure investments across the City. Green stormwater infrastructure IS infrastructure and should be funded and valued as such by public agencies and maintained by trained professionals.

GSI represents a unique workforce challenge because it combines a wide variety of specific skill sets that exist within multiple trades, such as construction, landscaping and civil engineering. According to "<u>America's Water Sector Workforce Initiative: A Call to Action</u>," issued by the U.S. Environmental Protection Agency in 2020, the country is facing an unprecedented shortage in the workforce necessary to maintain water infrastructure due to an aging workforce that has not yet been replaced. While GSI is now an essential part of the water infrastructure sector, it is still a

relatively new field, so a trained labor force is still developing. At the same time, a key component of GSI maintenance is in a different professional field altogether: maintaining native landscapes. Even within the landscape industry in Chicago, this can be specialized knowledge that requires significant training and inspection. Thus, finding qualified contractors that can manage both the surfaces and structures as well as the landscape elements is extremely challenging. Without consistent funding for maintenance work, there is little interest in training a workforce to learn the skills to maintain the GSI. This leaves GSI in our cities vulnerable to a continued lack of maintenance and few people trained how to maintain it.



GSI MAINTENANCE WORKING GROUP + COMMITTEES 2019 - 2023

GSI MAINTENANCE WORKING GROUP: 2019 + 2020

The GSI Maintenance Working Group (Working Group) has been meeting since 2019, when Healthy Schools Campaign (HSC) and Openlands first gathered public agency partners to explore the needs, opportunities and interest for a more coordinated approach to maintaining the city's GSI assets.

With the support of a mini-grant from U-Haul and The Conservation Fund's <u>Parks With Purpose</u> program, HSC and Openlands were able to begin exploring where city agencies could pool resources, capital, staff, equipment or other resources to develop a citywide GSI maintenance plan. With that support, from May 2019 through October 2020, the partners successfully:

- Conducted research and held focus group meetings with regional partners, organizations and agencies to develop a broad understanding of the issues impacting GSI maintenance in the Chicago region.
- Developed, disseminated and analyzed a survey of GSI partners to understand the baseline maintenance conditions of public GSI in Chicago.
- Identified the barriers, gaps, needs and opportunities reported by GSI partners in Chicago.
- Planned and facilitated three convenings of nine Chicago public agencies that are responsible for GSI to discuss the barriers, gaps, needs and opportunities and initiate dialogue about potential coordinated solutions.
- Provided a platform and opportunity for networking among the staff of various agencies.
- Developed a partnership with the Chief Sustainability Officer for the City of Chicago, to serve as a co-convener of the initiative.
- Identified four main pieces of work that would need to advance in order to develop a coordinated citywide GSI maintenance plan, and suggested four working committees to address these:
 - Funding + Policy
 - Mapping, Data + Inventory
 - Workforce Development + Training
 - Guidelines + Standardizations

A report of findings that was developed in 2019 from the initial convenings, surveys and focus groups is included in the Appendices section of this report.

GSI MAINTENANCE WORKING GROUP: 2021 THROUGH MAY 2023

Despite the enthusiasm from Working Group participants and the high priority need indicated for a coordinated citywide GSI maintenance plan, the partners were unable to convene the group throughout 2021, due to a gap in resources caused by shifting capacity and focus during the onset of the COVID-19 pandemic. The co-convenors - HSC, Openlands and the City of Chicago's Office of Climate and Environmental Equity (OCEE) - were successful in securing a small grant from the <u>Illinois Coastal Management Program</u> to restart the Working Group convenings in early 2022 and work toward a more formalized plan of action. With this support, between June 2022 and June 2023, the co-conveners successfully:

- Convened the Working Group, with participation from all member agencies, in December 2022, where the group found inspiration in a peer learning presentation from the Philadelphia Stormwater Operations Department.¹
- Reconfirmed the charge of the working committees identified in October 2020 and selected co-chairs for each.
- Convened eight committee meetings and documented progress and outcomes throughout winter/spring of 2023.
- Conducted a survey of all Working Group participants in April 2023.
- Convened the Working Group in May 2023 to share out progress from each committee and to identify collective next steps for the Working Group.

The meeting agendas for all Working Group and committee meetings, committee expectations and a list of all the resources shared with the Working Group are included in the Appendices section of this report.

COMMITTEE OUTCOMES: SPRING 2023

The Working Group initially divided the work into four main subcommittees: 1) Mapping, Data + Inventory; 2) Workforce Development + Training; 3) Guidance + Standardization; and 4) Funding + Policy. These subcommittees were designed to support distinct areas of focus or work to contribute to a more coordinated approach to GSI maintenance in the city. Due to capacity and timing limitations of the participants, the Working Group decided to table the Guidance + Standardization committee work for the moment, and focus on building out the other three committees in early 2023.

MAPPING, DATA + INVENTORY

Early on, the Working Group identified a need to understand the current baseline of GSI assets in the city, in order to determine the labor inputs needed to maintain these and calculate the estimated cost associated. The Mapping, Data + Inventory committee was tasked with determining who could and how to best build the inventory. The committee was co-chaired by Holly Sauter from MWRD and Luke Mich from DPD, and met in March 2023 and April 2023, with "homework" that was completed by committee members in between meetings. The committee considered the following questions, some of which are being addressed now and some have been prioritized as near-term next steps.

¹ Ashley Willis, of the Philadelphia Green Stormwater Operations Department, delivered a presentation plus live Q+A with Working Group participants. Over the past 10 years, the Philadelphia Green Stormwater Operations Department has operationalized all publicly owned green infrastructure maintenance across the city - to the point that the Philadelphia team has now managed 27,000 work orders specifically related to GSI maintenance tasks.

Where should an inventory of GSI "live" within/among the agencies? Which agency should be responsible for maintaining and routinely updating the data?

The committee spent a great deal of time considering this question and has not yet reached consensus. There are many options, as several agencies have existing technology or internal infrastructure to build from and they may or may not be the same as the agencies that are designing, funding, building or maintaining the GSI assets. The committee struggled with the lack of a central point person or agency that ultimately "owns" or coordinates GSI within the city, who could be empowered to identify where best to house an inventory of GSI.

One option the committee discussed was within the Department of Assets, Information and Services (AIS), which houses and maintains the city's Geographic Information Systems. AIS also maintains the city's Riverwalk, which includes GSI assets. Another option was leveraging or developing a model similar to the Office of Underground Coordination (OUC), which is housed within the Chicago Department of Transportation. The OUC includes several agency partners (all of whom are represented on the Working Group) as well as external utility partners to coordinate permit reviews for various capital projects. The OUC maintains a database with a wealth of information related to permitted projects and may already have many data points of need/interest to a GSI inventory.

Does the inventory need to be "dynamic" or could/should it be static?

The committee deliberated whether an interactive map of GSI assets was required, and whether it would be utilized to its fullest potential. They also deliberated on the level of granularity that might be needed - should the inventory include point data or polygon data (of which, polygon data are more challenging/tedious to develop)?

Ultimately, the committee decided that for the near-term goal of understanding the baseline of existing GSI assets in the city from which the Working Group can determine the scope and potential cost of maintenance of these assets, a static database would suffice. However, the committee recognized that the database should be assembled in a way to set the group up for success in addressing medium- to long-term goals. Thinking about the Philadelphia Stormwater Operations Department model, the committee could envision the potential or eventual need for a work order system that could be integrated into a dynamic, interactive map of GSI assets across the city. The recommendation was to work toward building a system of point data that could include helpful attributes and links to as-built drawings which could inform a work order system down the road.

Which data would be most useful to collect for the inventory?

The nature of GSI is to use stormwater best management practices (BMPs) tailored to an individual site's characteristics, meaning that every GSI asset will be considered differently (though the maintenance techniques may be the same). The committee gathered input from the Workforce Development + Training committee as well as outside sources to consider this topic fully. Overall, the following were considered to be the minimum information that should be collected for each GSI asset:

- Location (address or coordinates of the property and location of the BMP(s) on the site)
- Owner (property owner, and "owner" or funder of the BMP if different than property owner)
- Type of BMP(s) at the site
- Size of each BMP at the site (square feet or acres preferred)
- Current condition of each BMP at the site (develop a rating system: new/good/fair/poor or similar)

As-built drawing documenting construction of each BMP at the site (if available) The committee recognized the important work of local partners that have already begun efforts to map GSI assets in the Chicago area, and agreed there are existing models from which to build. The committee reviewed the Metropolitan Planning Council's (MPC) <u>Green Infrastructure</u> <u>Baseline Inventory</u> (GIBI) and the Chicago Wilderness Alliance's <u>Green Infrastructure Hub</u>. Each model was developed to serve different goals and geographies, but had valuable methodologies and definitions that the committee could adapt when considering or making recommendations for developing a process to inventory GSI assets across the city. In particular, MPC's GIBI appears very well aligned with the needs of this committee, and the committee invited participation from MPC staff to explore areas for further collaboration, around which discussions are continuing.

WORKFORCE DEVELOPMENT + TRAINING

The Workforce Development + Training committee was co-chaired by Monique Ellington of Greencorps Chicago Not for Profit and Ben Reynoso from CDOT, and met in March 2023 and April 2023. This committee recognizes the immense potential for building Chicago's water workforce by developing and supporting the GSI maintenance industry, and identified near-term opportunities that are likely to come with Inflation Reduction Act funding coming from the federal level. They also surfaced that a huge challenge to building more green infrastructure relies heavily on well-coordinated, sustainable long-term management of the city's GSI assets: if the city cannot maintain what it has built, it is unlikely to build more GSI in the future.

The committee deliberated the following questions to inform the foundation of a plan to address GSI maintenance workforce needs, and reviewed several resources - including the International Society for Arboriculture's <u>Careers in Arboriculture Pathways Chart</u> and Jobs for the Future's <u>Exploring the Green Infrastructure Workforce</u> - to inform the discussion.

How can the GSI maintenance field move from "one-off" projects to a more sustained workforce with enough work and funding?

The committee identified the need for training to be available in several areas. Not only does the GSI maintenance field need a trained labor force to perform the management of BMPs, there is a need to build the capacity of small and minority-owned businesses to respond to municipal bids, be eligible to enter into contracts with public agencies and have the skills and capacity to manage such contracts.

The GSI maintenance field must be developed with clear career pathways and training, and supportive services must be provided, with a focus on developing individuals throughout. This work must not be seen as temporary or seasonal, but with an emphasis on longevity and sustainability.

What are the career pathways into and through the GSI maintenance field?

The committee discussed the various job sectors and specific roles that feed into the GSI maintenance workforce, and identified a need to map the pathways into and through the GSI maintenance field. The committee began to identify the various pathways, many of which overlap with those identified by Jobs for the Future's 2017 report, "Exploring the Green Infrastructure Workforce." The committee ultimately plans to build out a map or flowchart, similar to the International Society of Arboriculture's flowchart of career pathways.

A number of organizations in Chicago are already focused on workforce development and the committee benefited from participation of Greencorps Chicago, OAI, Inc. and Current, which recently released <u>Upstream IL: Growing and Inclusive Blue Economy</u>. This new strategy to build the blue-green workforce in the Chicago region is timely and well aligned with building up the GSI maintenance industry. The committee recognizes an opportunity for further collaboration with Current, and could consider opportunities to work together to secure funding for a pilot project.

FUNDING + POLICY

The Funding + Policy committee was chaired by Lindy Wordlaw from the City of Chicago's Office of Climate and Environmental Equity with support from Meg Kelly from Healthy Schools Campaign, and met four times between February 2023 and April 2023. The committee focused on identifying barriers and opportunities to developing a comprehensive GSI maintenance plan and funding GSI maintenance work in the city, and reviewed several case studies and models from other cities.

The committee's discussions very quickly surfaced the need for a broader citywide green infrastructure strategy (that includes maintenance as a distinct pillar), and acknowledged that the city's green infrastructure strategy developed in 2014 was not broadly implemented. The committee also highlighted that even traditional landscape management and other maintenance budgets across the board are being cut, and identified a need for a smoother process to develop inter-agency or intergovernmental agreements to allow for cross-department and cross-agency coordination. The committee amplified the lack of comprehensive maintenance procedures of GSI as a major barrier to building more GSI assets for the city - until the maintenance issue can be solved, some agencies refrain from building more or will "water down" the design of GSI installations due to maintenance challenges.

The committee identified a number of existing models and resources that the agencies working in Chicago could consider when developing a more comprehensive GSI maintenance plan or strategy:

- The significant federal funding flowing to cities from the Infrastructure Investment and Jobs Act (IIJA), the Inflation Reduction Act of 2022 and others is prioritizing workforce development, nature-based solutions and investment in historically disinvested communities, and presents a real opportunity to develop a well-trained GSI maintenance workforce.
 - Greencorps Chicago, OAI, Inc. and other workforce development organizations have existing infrastructure that can be harnessed and leveraged in such an effort.
- The Philadelphia Stormwater Operations model has a number of resources and experiences that could help outline the needs and expectations for building a GSI maintenance plan for the city's GSI assets.
- A number of nonprofit and philanthropic partners working in the Chicago area are prioritizing and supporting GSI and nature-based solutions, and can be engaged to support GSI maintenance planning.
 - For example, the Space to Grow program has been operating for nearly ten years and is a model of cross-agency coordination with many lessons learned and resources to share.

GSI WORKING GROUP SURVEY: APRIL-MAY 2023

Each of the committees surfaced a number of priorities and activities that can be addressed in the near- or long-term. In advance of the full Working Group meeting on May 15, 2023, the co-conveners developed, disseminated and analyzed a survey to better understand the participants' preferences on next steps and direction. The full survey results are included in the Appendices section of this report, and the broad takeaways follow.

Everyone agreed that there is a need for a citywide GSI maintenance coordination effort in Chicago and that maintaining GSI assets is critical to the city's climate resilience infrastructure. Respondents felt that the OCEE, DWM, CDOT and MWRD bear the most responsibility to coordinate a citywide GSI maintenance effort.

An interesting takeaway from the survey indicated that while the Mapping, Data + Inventory committee agreed that starting with a static database of GSI assets would be a sufficient start, the broader group indicated more urgency for an interactive or more dynamic map or system to develop the GSI baseline inventory.

Survey respondents identified the following as the top near-term (6-8 months) challenges for the Working Group to address.

- #1: Lack of funding allocated for maintenance of GSI assets
- #2: Lack of a dedicated point person (position), department or office that is responsible for GSI
- Tied for #3: Difficulty with establishing inter-agency or cross-departmental agreements to allow for cooperation or coordination around maintaining GSI assets

• Tied for #3: Difficulty with establishing inter-agency or cross-departmental agreements to allow for cooperation or coordination around maintaining GSI assets

Respondents identified the following three near-term action items that could help address these needs:

- Build a dynamic inventory (interactive map) of public GSI across the city that includes the current site condition and can serve as the basis for operationalizing GSI maintenance
- Convene a task for of public agency leaders from the city's sister agencies and MWRD to identify a point position, department or office to be responsible for GSI maintenance coordination efforts
- Further research GSI maintenance and associated funding models from across the country (such as One Water framework, Joint Benefits Authority, etc.)

Thinking beyond the near-term, the survey respondents offered ideas for other topics and other ways the Working Group could work together, which included:

- Hosting an online forum or platform for collaboration (e.g., Slack channel or Google group) among passionate individuals from the agencies as a place to share resources and ideas.
- Continuing to share and highlight successful models and examples of GSI projects, and conduct site visits of successful models of GSI.
- Developing a collaborative pilot project to include training of Greencorps or other similar organizations to support work offered by municipal contracts.
- Developing a GSI (or nature-based solutions) plan that addresses maintenance with actionable steps, with the intention of MWRD and City of Chicago working in partnership on this.



MOVING FORWARD, RECOMMENDATIONS + NEXT STEPS

GSI MAINTENANCE WORKING GROUP: WHAT COMES NEXT

The Working Group participants made it clear through their survey responses and contributions at the meetings that this initiative is important, valued and would see continued participation from the members. The next step is to work with the new Mayoral administration to prioritize this effort and develop a work plan for future Working Group efforts. The Working Group agreed to begin reconvening regular meetings in August 2023, and identified action items and complementary efforts/initiatives that would take place in preparation for those meetings.

The Working Group has built great momentum. Considering the recent change in Mayoral administration, along with an influx of federal funding being made available to cities, this is an opportune time to move this group into action.

NEAR-TERM RECOMMENDATIONS + NEXT STEPS

- Continue regular Working Group and committee meetings, with the goal of moving to authorize one agency or department to house and lead the effort starting in 2024.
 - HSC, Openlands and OCEE to continue to co-convene through 2023.
- Consider convening a task force with public, advocacy, community and philanthropic representatives to develop an updated green stormwater infrastructure strategy that includes longterm sustainable funding for maintenance; conduct more research and/or feasibility studies on inter-agency coordination models and/or distinct GSI department within an agency.
 - Funding + Policy committee members could establish a task force to address these issues, and could consider applying for grant funding to support.
- Explore and work collaboratively to compete for federal funding for this work, including a potential workforce development pilot focused on GSI initiatives at Space to Grow sites.
 - CPS, DWM, MWRD, CDOT/Greencorps, OAI and Current to collaborate on this effort.
- Conduct more research into the U.S. Water Alliance's One Water initiative; determine whether/how Chicago can align.
 - HSC, Openlands and OCEE lead, with Funding + Policy committee.
- Provide more GSI industry leadership development for public agency staff, such as participation in the Green Infrastructure Leadership Exchange or attending national conferences focused on GSI and other water industry issues.
 - DWM, CDOT, MWRD, OCEE, AIS and DPD staff to consider participation.

COMPLEMENTARY ACTIONS + INITIATIVES: MAPPING, DATA + INVENTORY

In summer 2023, Openlands began a pilot project to further explore the concept of developing a citywide GSI inventory for Chicago, focusing on sites identified by MPC's GIBI. This pilot includes inspection of and interviews with owners and/or managers of 22 bioswale and engineered rain

garden sites that have been installed on Chicago's south and west sides. The pilot is still in progress and the following information is being collected:

- BMP location
- Property owner
- Parcel Identification Number associated with BMP
- Entity responsible for maintenance
- Assessment of current condition of BMPs, focusing on stormwater retention, vegetation, debris and inlet/outlet components

The pilot will also identify maintenance recommendations for each site based on inspections. These recommendations can be used in both site work plans and to give a sense of the ongoing maintenance needs at other sites.

Openlands will share the findings from the pilot with the Mapping, Data + Inventory committee, which will continue to collaborate with MPC to determine where the GIBI can be leveraged or expanded.

COMPLEMENTARY ACTIONS + INITIATIVES: WORKFORCE DEVELOPMENT + TRAINING

• Further align this work with complementary efforts underway at Current and engage Current leadership in committee leadership activities.

COMPLEMENTARY ACTIONS + INITIATIVES: FUNDING + POLICY

- Engage agency commissioners in discussions with the new Mayoral administration to prioritize this work and share progress with Chicago leadership.
- Work with agency partners and the mayor's office to identify a lead agency and high level staffer for the GSI portfolio.



APPENDICES

APPENDIX A: LIST OF GSI WORKING GROUP MEMBERS

GSI Working Group Co-Convenors

Healthy Schools Campaign

- Meg Kelly, Space to Grow Director
- Claire Marcy, Senior Vice President

Openlands

• Daniella Pereira, Vice President of Community Conservation

City of Chicago, Office of Climate and Environmental Equity (OCEE)

- Angela Tovar, Chief Sustainability Officer
- Lindy Wordlaw, Chicago Recovery Plan Director Climate and Environmental Justice Initiatives

Facilitation + Documentation Support

Daylight

• Ketzel Feasley, Strategist

GSI Working Group Participants (Current as of July 2023)

Chicago Department of Assets, Information and Services (AIS)

- Rudolph Sanchez, Manager of Building Services
- Kimberly Worthington, Deputy Commissioner, Bureau of Environmental, Health and Safety Management

Chicago Department of Transportation (CDOT)

- Antonio Lubanski, Civil Engineer III
- Ben Reynoso, Projects Administrator
- Kris Sorich, Senior Landscape Architect/Plan Examiner
- Sean Wiedel, Deputy Commissioner, Division of Citywide Services
- Greencorps Chicago Staff
 - Andy Johnson, Program Director, WRD Environmental
 - Curtis McKinney, Greencorps Chicago Project Coordinator, CDOT

Chicago Public Schools (CPS)

- Rob Christlieb, Executive Director of Facilities, Operations + Maintenance
- Esther Walker, Senior Manager of Facilities Operations
- Marek Wisniewski, Director Facilities, Operations + Maintenance

Chicago Department of Planning + Development (DPD)

- Luke Mich, Sustainability and Resiliency Project Manager
- Brad Roback, Systems Planning Division Lead

Chicago Department of Water Management (DWM)

- Johnfavour Ng, Civil Engineer II
- Ionatan Mulatan, Civil Engineer III
- Brendan Schreiber, Chief Engineer of Sewers

Chicago Department of Streets + Sanitation (DSS)

• Joseph McCarthy, Senior City Forester

Metropolitan Water Reclamation District of Greater Chicago (MWRD)

- Joe Kratzer, Managing Civil Engineer
- Holly Sauter, Principal Civil Engineer

Chicago Park District (CPD)

- Cathy Breitenbach, Director of Cultural and Natural Resources
- cassi saari, Project Manager, Natural Areas

Nonprofit Partner Participants

Current

- Alaina Harkness, Executive Director
- Kalindi Parikh, Program Builder

Greencorps Chicago Not for Profit Organization

• Monique Ellington-Green, Executive Director

Metropolitan Planning Council (MPC)

- Ryan Wilson, Senior Manager
- Drew Williams-Clark (formerly Director, Equitable and Sustainable Communities)
- OAI, Inc.
 - Kara Riggio, Green Infrastructure Initiatives
- Openlands
 - Craig Shillinglaw, GIS Coordinator

APPENDIX B: INITIAL REPORT (2019)

2019 Report: Exploring a Coordinated Approach to Green Stormwater Infrastructure Maintenance in Chicago

APPENDIX C: GSI WORKING GROUP MEETINGS 2019+2020

GSI Maintenance Working Group Agendas

APPENDIX D: GSI WORKING GROUP MEETINGS 2022-2023

GSI Maintenance Working Group Agendas + Committee Expectations

APPENDIX E: SURVEY RESULTS

GSI Maintenance Working Group Survey: April 2023

APPENDIX F: RESOURCES

List of resources, reference documents, case studies and models that were shared with the GSI Maintenance Working Group and three committees (Dec 2022 - May 2023):

- Chicago Wilderness Alliance: <u>Green Infrastructure Hub</u>
- City of Chicago Green Stormwater Infrastructure Strategy (2014)
- Current's Upstream IL: Growing and Inclusive Blue Economy
- Green Infrastructure Leadership Exchange: The State of Public Sector GSI, 2022
- IL-IN Sea Grant: <u>Growing Infrastructure, Growing Economies, Nurturing Investments:</u> <u>Stormwater Infrastructure Training & Maintenance Needs Assessment</u>
- International Society for Arboriculture: Careers in Arboriculture Pathways Chart
- Jobs for the Future: Exploring the Green Infrastructure Workforce
- Metropolitan Planning Council: <u>Calumet Stormwater Collaborative</u>
- Metropolitan Planning Council: Green Infrastructure Baseline Inventory
- Milwaukee's Fresh Coast Guardians Green Infrastructure Plans
- Philadelphia Green Stormwater Infrastructure Maintenance Manual
- Pittsburgh's Negley Run Watershed Task Force
- Portland Sewer and Drainage Facilities Design Manual
- US Water Alliance: One Water Hub
- One Water Denver
- One Water Milwaukee
- One Water Pittsburgh
- One Water Vancouver
- World Resources Institute: <u>Joint Benefits Authority Integrated Public Investments for Livable</u> <u>Cities</u>

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