



A Project of Global Philanthropy Partnership

**2021 Collaborative Grant Program
Grant Agreement**

October 8, 2021

Reid Bogert
Stormwater Program Specialist
City/County Association of Governments of San Mateo County

Dear Reid:

On behalf of the Green Infrastructure Leadership Exchange (“the Exchange”), a project of Global Philanthropy Partnership (GPP), we are pleased to award a 2021 Collaborative Grant of \$40,000 USD to City/County Association of Governments of San Mateo County, CA (“Grantee”). These funds will be used to implement the *Climate Resilience Resources Guide: Part I* project. The work is described in greater detail in the Final Project Proposal, Appendix A.

Grant Summary.

- **Participants:**
 - **Lead Community:** City/County Association of Governments of San Mateo County
 - **Project Lead:** Reid Bogert; Stormwater Program Specialist; 555 County Center, Fifth Floor, Redwood City, CA 94063; rbogert@smcgov.org, 650-863-2126
 - **Other Participating Member Communities**
 - San Francisco Public Utilities Commission
 - Will Logsdon, Watershed Planner
 - Philadelphia Water Department, Green Stormwater Infrastructure Unit
 - Stephanie Chiorean, Environmental Staff Scientist and Planner
 - City of Baltimore
 - Kimberly Grove, Chief, Office of Compliance and Laboratories
 - City of Portland, Bureau of Environmental Services
 - Adrienne Aiona, Senior Engineer
- **Project Term:** December 1, 2021 – September 1, 2022

Project clarification requested from the Exchange Selection Committee:

- *Please clarify roles of the partners and confirm their commitments. Also, please clarify the phasing flow and how the work will address the needs of different climates.*

The project partners listed above were invited to participate in the development of the Climate Resilience Resources Guide: Phase I project based on previous interest in or involvement with the GI Exchange’s



Planning and Resilience focus area activities. In developing the concept for the Resilience Resources Guide: Phase I, the interested partners held multiple meetings to refine a proposed project idea and scope that would be targeted enough to advance climate resilience in GSI planning and implementation in a meaningful way, but also with a broad enough brush, with the initial proposed Phase I, to make the Resources Guide accessible and useful for any GI Exchange member at any point in their unique process of integrating climate change planning and design into respective GSI programs. Given resource constraints and the range of climate and regulatory conditions among represented GI Exchange Member agencies, the project's intent is to start broad and simple in terms of the scope and complexity of advancing climate resilience GSI tools. Each project partner has shown a commitment to their involvement in the project and is bringing regionally specific perspectives on climate resilience planning and GSI implementation, with an agreed upon desire to collectively move towards cohesive guidance that would support any member agency. Two partner members (representatives from the San Francisco Public Utilities Commission and the Philadelphia Water Department) are members of the Water Utilities Climate Alliance and are actively involved in integrated climate resilience water planning. Three of the four partners are from combined sewer communities, while two are from separate sewer communities. Further, the partners represent geographically distinct climatic variation, which while creating potential divergence in GSI planning and implementation approaches, as well as different focuses with respect to climate impacts, the team has greater confidence in developing resources and guidance that will promote more value across agencies of the GI Exchange. With a variety of expertise, ranging from GSI planning to project implementation to department oversight to multi-jurisdiction coordination, the team represents a diversity of perspectives and levels of experience with climate resilience in the realm of GSI.

The two main project deliverables in the first phase 1) Annotated Bibliography and 2) Guidance/Tools for Creating Climate Resilient Design Standards are intended to achieve a two main goals at the outset of this focused work. One goal is to establish a consistent and wide range of resources for GI Exchange Members to refer to in advancing their respective climate change adaptation and resilience work. The second goal is to take a first step at generating specific guidance around adapting GSI design standards (could be policy or design specific guidance) with respect to climate change impacts that addresses regional variations in climatic trends and current or future climate change related impacts on the performance of GSI at a facility or watershed scale. Recognizing significant variability in design storms and associated GSI standards throughout North America, as well as variation in regulatory frameworks and drivers for siting, sizing and configuring GSI to address a multitude of water quality and flow related goals, this guidance is intended to be broadly applicable and not suggest revised regionally-specific design standards. The project team will work with the selected consultant to further develop this deliverable at the onset of the project, but initial proposals from the project partners suggested this deliverable could provide generalizable guidance on proven or piloted approaches to modifying design standards to mitigate common climate impacts, including increased storm intensity and/or peak flow volumes; drought and the need to capture, store and infiltrate to the extent possible to support broader water conservation/supply goals, or perhaps looking at a watershed scale how to design and configure distributed GSI to best manage the anticipated overall projected changes in precipitation to maximize opportunities to reduce local flooding/sewer



overflows when there are large storms and to capture, store, infiltrate or reuse runoff to account for dry periods.

Further recognizing the limited funding available on a per project basis under this grant program, and the expansive and growing field of climate resilience with respect to GSI, The project partners agreed that phasing the Climate Resilient Resources Guide would be the most economic and realistic approach toward achieving the GI Exchange’s longer-term efforts in the focus area of Planning and Resilience. It is the project team’s hope to pursue additional funding in future Collaborative Grant rounds, building off of Phase I of this project, to advance Part II, II, etc., each of which would focus on another selected area of need and to deliver practical tools for agencies to continue advancing GSI resilience. For example, Part II could focus on establishing regionally-specific “roadmaps” for evaluating and setting climate resilience targets for GSI implementation that account for climate change related precipitation impacts.

Table 1. Schedule of Project Deliverables and Payments

#	Activity	Deliverable	Due Date	Payment / Recipient
	Agreement(s)	Signed Grant agreement(s)	Not later than 30 days after award notification	
	Communications Briefing	Discuss and develop a framing and messaging approach with Exchange staff: <ul style="list-style-type: none"> • Establish roles and expectations • Discuss / confirm a promotional plan 	Upon signing of grant agreement	
	Quarterly Update 1	250-word update	Q1: January 11, 2022	
1	Activity 1: Literature survey of existing GSI climate resilience planning, implementation, operations/maintenance tools/resources/strategies	Deliverable 1: Memo outlining state of the science on integrating climate resilience into GSI planning and implementation (including design and operations and maintenance, as well as factors for ensuring GSI is maximizing community resilience in face of climate change). Include identified data/resource gaps, and detailed considerations for different climate drivers, scale, regulatory frameworks	Date: January 31, 2022	Payment #1 upon receipt of Deliverable 1: \$5,000 to City/County Association of Governments of San Mateo County



2	Activity 2: Develop Climate Resilience Resource Guide Annotated Bibliography	Deliverable 2: Draft/Final Climate Resilience Resource Annotated Bibliography	Date: April 29, 2022	Payment #2 upon receipt of Deliverable 2: \$15,000 to City/County Association of Governments of San Mateo County
	Midyear meeting 1 (April)	Call with Exchange Staff: <ul style="list-style-type: none"> • Check in on progress • Discuss dissemination / promotion • Prep for Annual Meeting, if applicable 	Call to be scheduled by Exchange staff	
	Quarterly Update 2	250-word update	Q2: April 12, 2022	
3	Activity 3: Develop Guidance/Tools for Creating Climate Resilient GSI Design Standards	Deliverable 3: In-depth guidance on advancing GSI Design Standards to be responsive to climate change impacts (including drought, increased inundation, larger storms, etc.)	Date: July 15, 2022	Payment #3 upon receipt of Deliverable 3: \$20,000 to City/County Association of Governments of San Mateo County
	Final Reporting	Final Grantee Report and Budget Reconciliation	Date: September 1, 2022	

Grant Reporting Requirements. Grantees are responsible for the following:

1. **Communications.** Grantees will be asked to attend the following periodic calls with Exchange staff, so they are aware of any issues and so plans for promoting and disseminating the work can be discussed. The goal is that others in the Green Stormwater Infrastructure (GSI) field are aware of / benefiting from the outputs.
 - a. Kick-off meeting (October or November)
 - i. Establish roles and expectations
 - ii. Discuss and confirm a dissemination and promotional plan
 - b. Midyear meeting 1 (April)
 - i. Check in on progress
 - ii. Discuss dissemination / promotion as needed
 - iii. Prep for Annual Meeting, if applicable
2. **Quarterly Updates.** A paragraph of 250 words or less describing progress to date will be submitted to fund management per the schedule in Table 1.



3. **Final Grant Reporting.** At the end of the grant period, the Grantee will submit a [Final Grantee Report](#). This documents outcomes in 5 pages or less and requests a detailed record of expended funds.
4. **Debriefing Call:** Near the end of the grant terms, Grantees debrief with the Fund Manager and Exchange Staff to understand what worked, what can be improved, and possible next steps.
5. **Grant Products.** All products produced from the collaboration will be received by fund management and posted on the Exchange website and social channels for member use.
6. **Presentations.** Grantees should expect to present updates and outcomes with Exchange Peer Learning Circles and at Exchange convenings as requested by staff, and to promote final materials in other venues where the lessons and outputs can help others.

Reference the [Award Guidelines and Policies](#) for more information on fund processes.

Intellectual Property Rights and Additional Terms. Intellectual property created, made, or originated from this grant project by the Grantee or its subcontractors or partners is jointly owned by the Grantee and the Exchange / GPP. Finished products may be shared publicly by the Exchange / GPP.

- Grant funds cannot be used for lobbying.
- Grant funds must be expended per the proposed budget. Variances above 10% for any line item require written permission from the Fund Manager. Reference the [Award Guidelines and Policies](#).
- This project is a collaboration with the entities named in the Grant Summary.
- The products in Table 1 will be delivered by May 31, 2022.
- The Lead Member Grantee accepts full responsibility of project management, coordination, and reporting.
- Reid Bogert will be the primary contact.

We congratulate you for your efforts and are delighted to share the news of this award with you.

Sincerely,

April K. Donnellan
Executive Director, Global Philanthropy Partnership

Date

cc: Paula Conolly, Exchange (paula@giexchange.org)



Acceptance of Grant Terms

The Grantee, City/County Association of Governments of San Mateo County, CA, accepts the terms of this agreement.

Organization Name: City/County Association of Governments of San Mateo County, CA

Name: _____

Title: _____

Date: _____

Signature: _____

EIN/Tax ID: _____

Invoicing instructions. Invoices should be addressed to Global Philanthropy Partnership with the following information. They should be emailed to fund management for review prior to processing:

Reference: Exchange Collaborative Grant Program GIEx13 – San Mateo County
Attn: April Donnellan, Executive Director
Global Philanthropy Partnership
1916 N. Mohawk Street, #7
Chicago, IL 60614
april@global-philanthropy.org

Make payment to: _____

Payment address: _____

ACH Payment Instructions: _____

Contact information should payment questions arise:

Name: _____

Phone: _____ Email: _____



Appendix A. Awarded Proposal

1. Project Title.

Climate Resilience Resources Guide: Part I (Member-to-Member Grant)

2. Amount Requested.

\$40,000

3. Project Purpose.

The primary purpose is to develop Part I of a resource guide to help agencies advance planning, implementation and long-term operations and maintenance of GSI with respect to modeled climate change impacts. Part I will be primarily an “information gathering” exercise and has two elements, an annotated bibliography and technical guidance on incorporating climate resilience into GSI design standards. A key deliverable will be the development of an annotated bibliography of resilience planning resources, leveraging the existing literature. The bibliography will be a comprehensive resource covering available state of the knowledge guidance for incorporating resilience into regulatory compliance, planning, design, implementation and operations and maintenance. Where there are gaps in existing tools and examples of methodologies, the project will make recommendations for studies or additional tools needed to fill data and resource gaps. The second deliverable will be a document providing technical guidance on how to incorporate climate resilience into design standards for GSI facilities to ensure GSI is responsive to changing conditions.

We envision Part 1 being the first step in a multi-part project developed and updated over several years as climate science and GI Exchange member practitioner expertise and tools evolve in relation to stormwater management and climate resilience. Future parts of the project could build on the tools needed to increase the feasibility, effectiveness of a resilience approach to stormwater management, and could include elements such as a roadmap for setting resilience targets for watershed-scale stormwater management, new design details for resilience based designs, climate-relevant plant palettes, performance thresholds for when to implement resilience-based designs, other policies to encourage onsite stormwater management to better address climate change, and case studies demonstrating how to approach different phases or components of resilience-based stormwater management.

4. Lead GI Exchange Member.

Reid Bogert/Stormwater Program Specialist/City/County Association of Governments of San Mateo County; 555 County Center, Fifth Floor, Redwood City, CA 94063; rbogert@smcgov.org, 650-863-2126

5. Other Primary GI Exchange Member.

Will Logsdon, Watershed Planner, San Francisco Public Utilities Commission

6. Other Participants.

- Stephanie Chiorean, Environmental Staff Scientist and Planner, Philadelphia Water Department, Green Stormwater Infrastructure Unit, role/importance for success on project
- Kimberly Grove, title role/importance for success on project



- Adrienne Aiona, Senior Engineer, City of Portland, Bureau of Environmental Services

7. Summary.

As communities throughout North America continue to face the impacts of climate change, whether extreme heat, increased frequency/intensity of storms, or drought, the relevance and role of GSI in managing stormwater but also adapting to climate change becomes increasingly clear. GSI is a necessary tool to plan for a future of changing conditions. Current regulatory frameworks, however, in both combined and separate sewer systems, are driven by water quality and quantity mandates, and green infrastructure design standards and associated policies are based on historical rainfall patterns and water quality objectives. This project will move GI Exchange members towards adaptive approaches to managing stormwater under future climate change conditions and will provide the necessary tools via a multi-part “Climate Resilience Resources Guide” that will evolve over time as the state of the science and practitioners continue down the inevitable path of properly accounting for climate impacts in stormwater management. To make this resource guide broadly applicable and useful for all GI Exchange members, it will be developed in multiple parts, with Part I focusing on a comprehensive annotated bibliography of existing resources and identified information/resource gaps, paired with an initial section of the resource guide addressing how to incorporate climate resiliency into new design standards for GSI facilities that can account for water quality and projected impacts of increased storm intensity/duration/volume (or could be more responsive to drought). Ultimately, this project will fulfill a significant need in the GSI community (across the GI Exchange Leadership Exchange and beyond) to evaluate the optimal technical and policy approach(es) to integrating climate change adaptation into current regulatory frameworks and the overall process of planning, designing, building and maintaining GSI.

8. Network Focus Area(s).

Planning and Resilience - this project will fill a critical information gap for municipalities and stormwater managers with respect to climate resilient GSI planning, implementation and operations and maintenance. Many communities are embarking on studies to evaluate the potential for climate change impacts on stormwater, especially with respect to understanding future increased volumes of runoff associated with larger, more intense or longer duration storm events. This project, beginning with the initial step of Part I of a Climate Resilience Resource Guide, will set up GI Exchange members with the references, resources and a new set of tools, focused on resilience design standards, to advance the industry in climate resilient stormwater management.

9. Innovation.

As municipalities throughout North America continue to advance planning and implementation of GSI facilities in their communities, the need to better address the various impacts of climate change on stormwater management generally, and specifically with respect to GSI, should be a top priority. This is especially the case, given most current stormwater regulatory frameworks do not address climate impacts with respect to water quality or flow management. By generating a comprehensive Climate Resilience Resource Guide, agencies will be better positioned to take the next step regardless of what stage of integrating climate adaptation into their programs, whether conducting initial downscaled climate modeling, identifying a framework for developing watershed- or community-wide quantifiable targets for



buffering against climate impacts, evaluating thresholds for when to increase design standards to handle changes in precipitation, establishing new guidelines or typical details for system components to account for climate change (including for plant palettes and structural elements), or showing through case studies what others have already done to avoid reinventing the wheel in a quickly evolving field. This project will represent a critical first benchmark in integrating climate and resiliency planning in the field of stormwater management for GI Exchange members and municipalities across the country and beyond.

10. Expected Benefits.

a. gain valuable knowledge and best practices from new connections

Developing an annotated Climate Resilience Resources Guide will support the broader GI Exchange Network by providing A-Z resources, essentially a road-map to getting started or advancing from any point, on integrating climate resiliency into existing stormwater management and GSI programs. This resource will fill in critical information and resource gaps, but also identify future needs where existing resources and knowledge are lacking. The other component of developing guidance for integrating climate resiliency into GSI design standards will also support all network members and leverage expertise from partnering agencies to shape flexible but evidence based guidance to support GSI design standards modifications, which could address multiple climate risks (i.e., flooding, intense flow, heat, drought, salt, etc.).

b. solve an important problem and save time and money for members

The concept of developing essential resources and steps towards setting and working towards climate resiliency targets supports the GI Exchange’s overall effort to advance GSI across the network, but especially in terms of achieving equity and climate adaptation goals. This project will take a strong focus on the need to center GSI planning and implementation on equity, given GSI is a foundational asset for supporting community resilience to climate impacts, while further addressing potential concerns around equitable allocation of resources, effective community engagement and possible unintended consequences of gentrification and displacement. At the highest level, this project represents an opportunity to fortify stormwater infrastructure to ensure it is planned to address increased intensity/flow but also to give consideration to GSI performance on a site design basis to buffer and adapt system design to the impacts of climate change on GSI vegetation, biotreatment soil media, etc. But underlying these significant infrastructure needs is the broader community resilience context, and the impetus on municipalities to ensure GSI is an effective response to and a potential tool for communities to be designed for social, environmental and economic outcomes. Current policies and GSI designs do not sufficiently account for climate change, so this project will take the first step to solving a challenging and inevitable problem in GSI planning and implementation.

c. change programmatic approaches, policies, and/or processes as a result of peer learning

The outputs of this project will directly support new or expanded policy, planning and implementation developments among GI Exchange Member communities. Regardless of the jumping off point, whether for municipalities and stormwater programs that are currently advancing climate change modeling and adaptation planning or those that are just beginning to consider how climate change may impact existing practices, the Climate Resilience Resource Guide will open doors to next steps. The specific guidance on



resilience-based design standards will provide newly concrete tools for municipalities to consider adopting new or modified design standards that achieve water quality goals and are responsive to changes in climate. Additionally, design guidance for making GSI more responsive to region-specific climate change impacts could lead to more durable and functional GSI in the long-term, saving operations costs and ensuring GSI best serves the local communities. All of these tools will be shareable and adaptable to collaboration partners and the broader GI Exchange network.

d. involve partners

Because resilience in stormwater management may have variable meanings, interpretations and implications for GI Exchange members, based on variable regional climates, existing stormwater planning and implementation frameworks and regulatory structures, this effort will inherently require broad and deep collaboration among partners. The project will benefit from a diversity of stormwater program representation, featuring drivers regulatory environments and participation among members who have taken different approaches to GSI planning and implementation, but with a common interest in addressing climate change early enough in the planning and implementation phase to not miss the opportunity to account for likely future changes in precipitation patterns. Likewise, the project will benefit from involvement of partners with ranging expertise, including those with a greater focus on higher-level strategic planning who can connect the dots across the various aspects of integrating climate resilience into GSI programs, as well as more technical staff who can provide input on evolving needs, such as advancing GSI design standards or evaluating performance indicators for climate-responsive GSI, which could be paired with new policy/planning recommendations. Partners will also benefit from sharing perspectives on cost-effective project types, integrating water programs to support climate resiliency more broadly (i.e., infiltration/recharge, beneficial reuse, flood reduction, etc.).

e. integrate equity considerations into the work products

Equity is central to resilience planning, both in terms of adequately addressing potential climate hazards, as well as ensuring equity is central to the project planning and delivery process. The climate resilience annotated bibliography resource in particular presents an opportunity to ensure quantitative and qualitative assessments of community-focused resilience are a core part of the overall fabric and architecture in adapting GSI for climate change.

f. increase the quality and pace of project implementation, adoption, and scaling

The proposed project partners see this project as a necessary step in the evolution of GSI planning and implementation process to manage future climate impacts. There is a shared urgency to encourage climate-smart policy changes and new guidance to address the realities of stormwater management under climate change before municipalities go too far into implementation with management targets and facilities that are designed for current or historical conditions. As many municipalities have already dealt with climate change impacts on GSI (from heat to drought to increased inundation to salinity/winterization impacts) and several in the GI Exchange network have begun investigating the potential for future climate change effects on runoff, this project will advance the field of GSI planning and implementation to adequately account for climate change.

g. be sustained, if applicable, communicated widely, and replicated by others



The Climate Resilience Resource Guide is intentionally being conceptualized as a multi-part, multi-year effort, beginning with the broadest-brush framework and set of tools to support all GI Exchange members advance towards greater resilience in GSI programming and implementation. With this initial step, the Exchange will have in hand the state of science on climate resilience and adaptation with respect to GSI at all levels and scales of implementation, along with the known/identified gaps to advance next steps. The climate resilient GSI design standard guidance developed in this project would immediately be available to support municipalities with a tangible implementation tool, which could be adapted to local/regional contexts. There is potential to make the outputs relevant to the global stormwater community and the intention is to create a clearer path for addressing climate in GSI planning and implementation in a variety of community types and regulatory contexts.

11. Project Management.

Schedule of Grant Deliverables and Payments

#	Activity	Deliverable	Due Date	Payment Source and Recipient
1	Activity 1: Literature survey of existing GSI climate resilience planning, implementation, operations/maintenance tools/resources/strategies	Deliverable 1: Memo outlining state of the science on integrating climate resilience into GSI planning and implementation (including design and operations and maintenance, as well as factors for ensuring GSI is maximizing community resilience in face of climate change). Include identified data/resource gaps, and details considerations for different climate drivers, scale, regulatory frameworks	Date: January 29, 2022	Payment #1 upon receipt of Deliverable 1: \$5,000
2.	Activity 2: Develop Climate Resilience Resource Guide Annotated Bibliography	Deliverable: Draft/Final Climate Resilience Resource Annotated Bibliography	Date: March 30, 2022	Payment #2 upon receipt of Deliverable 2: \$15,000
3.	Activity 3: Develop Guidance/Tools for Creating Climate Resilient GSI Design Standards	Deliverable: In-depth guidance on advancing GSI Design Standards to be responsive to climate change impacts (including drought, increased inundation, larger storms, etc.)	Date: May 31, 2022	Payment #3 upon receipt of Deliverable 3: \$20,00